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ROMANO-BRITISH SCULPTURED SLAB, DISCOVERED AT RIBCHESTER, 1876.

See page 190.

B
1

TRANSACTIONS

OF THE

HISTORIC SOCIETY

OF

LANCASHIRE AND CHESHIRE.

TWENTY-EIGHTH SESSION.

THIRD SERIES—VOLUME IV.

V.28

SESSION 1875-76.

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This Volume has been edited by one of the Vice-Presidents, under the direction of the Council. The Writers of Papers are alone responsible for the facts and opinions contained in their respective communications.

THE ILLUSTRATIONS.

Plate I is from an electrotype, which Mr. Abram kindly permitted to be taken from his Wood Engraving.

The others have all been executed by Mr. Worrall, for the Society.

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[ARTHUR WAKEFIELD, Esq.]

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LIST OF MEMBERS.

SESSION XXVIII, 1875-76.

The first List was dated 23rd November, 1848; all whose names appeared in it are therefore Original Members. Those who have been enrolled as Mayors or Sheriffs have their year of office attached.

The letter P denotes that the Members, in connexion with whose names it occurs, have read papers before the Society.

Those whose names are printed in SMALL CAPITALS are Members of the Council; and in *Italics* are Life Members.

Those who are both Life Members and on the Council have their names printed in **CLARENDON TYPE.**

Those marked thus * are Resident. The post town Liverpool is usually omitted.

Those marked thus + are Life Members without payment.

A

P.	12th Dec., 1872.	Abram, W. A., 25, Alma street, Blackburn.
	12th Nov., 1874.	*Ackerley, W. B., 6, Richmond terrace.
	23rd Nov., 1848.	*Ainslie, Montague,* Grizedale hall, Hawkshead, Windermere.
	17th Dec., 1857.	*Anderson, Thomas Darnley*, Waverley, Farnham, Surrey.
	12th Jan., 1871.	Andrews, Frank, Apsley House, Ashton-under-Lyne.
	4th Dec., 1856.	Ansdell, John, St. Helens.
	23rd Nov., 1848.	Ansdell, Richard, A.R.A., Lytham house, St. Alban's road, Kensington, London, W.
H. Sh. Cheshire,	1857.	*Atkinson, William*, Southport.

B

	2nd Nov., 1865.	*BAILEY, F. J., L.R.C.P., 51, Grove street.
	25th Feb., 1873.	Banks, William L., F.S.A., Bodlondeb, Conway.
	8th June, 1854.	*Banning, John Johnson, 20, Castle street.
	20th April, 1876.	Bartle, Rev. Geo., D.D., The College, Freshfield.
	6th Mar., 1862.	*Bazley, Sir Thomas, Bart.*, M.P., Manchester, and Reform Club, London, S.W.
P.	6th Dec., 1849.	BEAMONT, WILLIAM, Orford Hall, Warrington, VICE-PRESIDENT.
	23rd Nov., 1848.	*Bell, Henry, Greenfield, West Kirkby, Birkenhead.

	4th Feb., 1875.	*Bellew, Thomas A., 5, Huntley road, Elm park.
P.	1st Dec., 1864.	*Benas, B. L., 5, South Castle street, and 74, Upper Parliament street.
	23rd Nov., 1848.	*Bennett, William, Sir Thomas's buildings, and Heysham Tower, near Lancaster.
	7th Mar., 1850.	Birch, Sir Thomas Bernard, Bart., The Hazles, Prescot.
	23rd Nov., 1848.	Birchall, Lieut.-Col. Thomas, Ribbleton hall, Preston.
	20th Sept., 1854.	Blackmore, William, Carshalton, Surrey, and Founder's court, Lothbury, London.
	12th Dec., 1872.	Bleckley, Henry, Latchford grange, Warrington.
	23rd Nov., 1848.	*Blundell, Thomas Weld, Ince Blundell hall, Great Crosby.
	1st May, 1856.	Booth, John Billington, Overleigh house, Preston.
	15th Dec., 1853.	Bossi, Arthur, (Melly, Forget and Co.), Rumford street.
	3rd Jan., 1856.	*Bouch, Thomas, 1, Oldhall street, and New Brighton.
P.	23rd Nov., 1848.	*Boult, Joseph, F.R.I.B.A., Exchange buildings, and Parkfield road, Aigburth.
	15th April, 1858.	*Bower, Anthony, Vauxhall foundry, and Seaforth.
P.	6th Dec., 1855.	Bowes, John, Ph.D., F.R.G.S., Warrington.
P.	3rd Dec., 1868.	Boyle, Henry, M.A.
P.	12th Dec., 1867.	Boyle, Frederick, F.R.G.S.
	23rd Mar., 1871.	*Brakell, T. F., 7, Cook street, and 23, Richmond terrace.
Mayor L'pool, 1848-9.		*Bramley-Moore, John, Hon. Mem. Archæol. Association, Aigburth.
	30th Dec., 1854.	Brent, Francis, Custom house, Plymouth.
P.	7th May, 1863.	Bright, E. B., 12, Hyde park gardens, London.
P.	9th Mar., 1854.	*Bright, Henry Arthur, A.M., Ashfield, Knotty Ash.
	4th Feb., 1864.	Bright, Sir Charles Tilston, C.E., F.R.S., 12, Hyde park gardens, London.
	20th April, 1876.	*Bromley, James, 11, Hope place.
	3rd May, 1849.	Brooke, Henry, Ashbrook hall, Church Minshull, Middlewich.
	6th Mar., 1851.	*Brooke, Sir Richard, Bart.*, Norton priory, Runcorn.
	6th Feb., 1868.	*Brooks, William Cunliffe*, M.P., Barlow hall, near Manchester.

4th April, 1872. *Broughton, Frederick*, Hamilton, Canada.

4th Mar., 1875. *Brown, Alex., M.P., Richmond Hill, Liverpool, and Grosvenor gardens, London.

P. 15th Dec., 1853. *Buxton, David, Ph.Dr., F.R.S.L., Principal of the Liverpool Deaf and Dumb Institution, Oxford street, Hon. Secretary.

7th Jan., 1875. *Byramjee, Dadabhai.

C

23rd Nov., 1848. *Caine, Nathaniel, Wellesley House, 38, Belvidere road, Prince's Park, and Broomhill, Broughton-in-Furness.

5th Sept., 1872. Chadwick, David, M.P., 61, Cross street, Manchester, and 27, Belsize park, London, N.W.

H. Sh. Chesh., 1855-6. *Chapman, John*, Hill End, Mottram-in-Longdendale.

5th Sept., 1872. *Chester, The Lord Bishop of*, The Palace, Dee Side, Chester.

10th Dec., 1874. *Clark, Henry, Little hey, Bromborough, and c. 7, Exchange buildings.

14th April, 1859. *Clement, Leonard*, Nelson-in-Marsden, near Burnley.

11th Dec., 1873. Cockayne, Andreas E., Congleton.

P. 24th May, 1855. ***COMBER, THOMAS,** B 13, Exchange buildings

4th Mar., 1858. *Crawford and Balcarres, Right Hon. the Earl of*, Haigh hall, Wigan.

6th Dec., 1849. *Crosfield, Henry, 4, Temple place, and Oaklands, Aigburth.

10th Dec., 1874. *Cross, William, M.D., 29, Islington.

23rd Nov., 1848. Crosse, Thomas Bright, Shawe hill, Chorley.

2nd May, 1850. Crossley, James, F.S.A., Cavendish place, All Saints, Manchester.

4th April, 1872. Crossley, John, Briar's hey, Rainhill.

P. 23rd Nov., 1848. *Cust, General the Hon. Sir Edward, Bart.*, K C.H., D.C.L., Leasowe Castle, Cheshire.

D

10th Dec., 1874. Dakin, Alderman, Congleton.

11th Dec., 1873. Daniel, T. A., Congleton.

23rd Nov., 1848. **Dawson, Henry*, 14, St. James's road.

P. 2nd May, 1850. *Dawson, Thomas, M.R.C.S. Eng., 26, Rodney street.

23rd April, 1857. *Devonshire, His Grace the Duke of*, K.G., D.C.L., F.R.S., Chatsworth, Derbyshire, and Devonshire house, London.

10th Dec., 1874. *Diggle, Rev. J. W., B.A., The Parsonage, Mossley hill.

P. 11th Dec., 1873. Dixon, James, F.R.H.S., Ormskirk.

9th Mar., 1871. *Dod, Joseph, 37, Cheapside, Dale street, and Bebington.

8th Jan., 1874. Doxey, Rev. Jon. Smith, Wood Top, Burnley.

E

P. 11th Dec., 1873. Earwaker, J. P., M.A., F.S.A., Withington, near Manchester.

4th April, 1872. Ebury, The Right Hon. Lord, Park street, Grosvenor square, London, and Moor Park, Rickmansworth, Herts.

6th Mar., 1862. *Edwards, Edward, Adelaide buildings, Chapel street, and Holly lodge, Fairfield.

7th Jan., 1851. *Egerton, Hon. Wilbraham,* M.P., Rosthern hall, Knutsford.

6th Mar., 1862. *Egerton of Tatton, Rt Hon. the Lord*, Lord Lieutenant of Cheshire, Tatton park, Knutsford.

P. 23rd Nov., 1848. *Egerton, Sir Philip de Malpas Grey*, Bart., M.P., F.R.S., F.G.S., Oulton park, Tarporley.

12th Dec., 1867. *Elsby, Miles Pilling, Bebington.

10th Dec., 1874. *Espin, the Worshipful and Rev. the Chancellor T. E., B.D., The Rectory, Wallasea.

23rd Nov., 1848. *Evans, Edward, 56, Hanover street.

P. 4th Nov., 1858. *Evans, Edward Francis, 44, St. Domingo vale.

11th Jan., 1872. *Evans, Reginald, 56, Hanover street.

5th Sept., 1872. Evans, Joseph, Haydock Grange, St. Helens.

F

ffarington, Miss, Worden Hall, Preston.

12th Jan., 1871. *Ferguson, Wm.*, F.E.S.

23rd Nov., 1848. *Finlay, William, Liverpool College, Shaw street.

15th April, 1858. *Forrest, J. A., 58, Lime street, and 5, Charlesville, Claughton, Birkenhead.

12th Jan., 1871. *Fownes, Frederick J., Lord street.

7th May, 1857. *Frackelton, Rev. S. S.*, A.M., Magherahamlet, Ballynahinch, Ireland.

15th Dec., 1853. *Franks, Augustus Woollaston*, A.M., F.S.A., British Museum, London.

7th Jan., 1858. Frost, Meadows, 25, The Albany, Oldhall street, and St. John's house, Chester.

G

14th Dec., 1848. *Gardner, Richard Cardwell, Colonial buildings, 34, Dale st., and Beechfield, Croxteth road.

7th Jan., 1875. *Garnett, William*, Quernmore park, Lancaster.

23rd Nov., 1848. *Gaskell, John Rooth, Exchange court, Exchange street East.

9th Dec., 1875. *Gatty, Chas. T., 7, Percy street, and Mayer Museum, Hon. Librarian.

7th April, 1870. Geddes, D., Free Library, Blackburn.

11th April, 1867. †*Genn, John Hawke, The Custom House, and 26, Sandon street.

4th Feb., 1875. *Gibson, J. Harris, 73, Renshaw street, Hon. Curator.

P. 5th Nov., 1863. *Gibson, Thomas, Senr., 51, Oxford street.

6th Mar., 1862. *Gladstone, Right Hon. W. E.*, M.P., 11, Carlton House terrace, London, S.W., and Hawarden Castle, Flintshire.

6th Feb., 1851. Gray, Colonel, Hanley hall, Reading.

17th April, 1873. Gratrix, Samuel, Alport Town, Deansgate, Manchester.

1st Dec., 1870. Green, Benjamin Lepard, Greenbank, Talbot street, Southport.

4th Dec., 1862. *Green, John Henry*, 8, Weighton road, Anerley, Surrey.

31st Aug., 1854. Grenside, Rev. William Bent, A.M., Melling Vicarage, Lancaster.

H

10th Dec., 1874. *Hance, E. W. M., LL.B., L.C.P., School Board office, Dale street.

F. 6th Mar., 1856. Hardwick, Chas., 74, Halston street, Hulme, Manchester.

12th Jan., 1854. *Harrison, Wm.*, F.S.A., F.G.S., F.R.Soc. North. Antiq., &c., Samlesbury hall, Preston; Conservative Club, St. James's, S.W.; and R.T.Y. Club, Albemarle street, London, W.

9th Feb., 1864. *Harrowby, Rt. Hon. the Earl of*, D.C.L., F.R.S., Sandon hall, Staffordshire, and 39, Grosvenor square, London.

23rd April, 1857. *Hartington, Most Hon. the Marquess of*, M.P., Chatsworth, Derbyshire, and Devonshire house, London.

8th Dec., 1864. Heald, Thomas, Greenfield, Billinge, Wigan.

P. 30th Nov., 1871. Heffer E. A., 6, Victoria road, Kilburn, London, N.W.

24th Oct., 1854. Heginbottom, George, Birkdale park, Southport.

23rd Nov., 1848. *Heywood, James*, F.R.S., F.S.A., F.G.S., 26, Kensington Palace gardens, London, W.

23rd Sept., 1854. *Hindmarsh, Fred.*, F.G.S., F.R.G.S., 4, New Inn, Strand, London, W.C.

5th Sept., 1872. *Hinmers, W.*, Cleveland house, Birkdale, Southport.

12th Jan., 1871. Hirst, John, jun., Dobcross, Saddleworth, near Manchester.

12th Jan., 1860. *Holden, Adam, 48, Church street.

18th Dec., 1856. *Holden, Thomas*, Springfield, Bolton.

11th Jan., 1872. *Holme, James, 10, Huskisson street.

24th Sept., 1854. *Holt, William D., 23, Edge lane.

10th Feb., 1876. *Horley Rev. E.*, The Rectory, Sephton.

5th Sept., 1872. *Hornby, T. D., 3, Brunswick street, and Druid's cross, Wavertree.

23rd Nov., 1848. Horsfall, Thomas Berry, Bellamour hall, Rugeley, Staffordshire.

4th Dec., 1856. *Howell, Edward, 26, Church street.

Mayor Lan., 1849-50. Howitt, Thomas, Lancaster.

P. 8th Nov., 1849. **HOWSON, VERY REV. JOHN SAUL,** D.D., The Deanery, Chester, PRESIDENT.

P. 10th Dec., 1857. *HUGHES, JOHN R., 17, Tower chambers.

6th April, 1854. HUGHES, THOMAS, F.S.A., The Groves, Chester.

25th Feb., 1873. *Hughes, W. G., Liverpool and London Chambers, and 16, Richmond terrace.

Mayor Ch., 1851-52. Humberston, Philip Stapleton, Glan-y-Wern, Denbigh.

P. 23rd Nov., 1848. †***HUME, REV. CANON,** D.C.L., LL.D., F.S.A., F.R.Soc. North. Antiq. Copenhagen, Corr. Mem. S.A. Scot., M.R.I.A., Member of the Philological Society, and of the English Dialect Society, Hon. Mem. Soc. Antiquaries, Newcastle-upon-Tyne, All Souls' Vicarage, Rupert lane, VICE PRESIDENT.

30th Nov., 1871. *Hutton, David, 3, St. George's crescent, and 2, Parkfield road, Prince's park.

10th Feb., 1870. Hyde, John, F.R.S.L., F.R.H.S., Gowan Lea villa, Shakspeare street, Southport.

J

1st April, 1852. *Jacob, John Gibborn, 56, Church street, Treasurer.

18th Feb., 1875. *Jackson, William Leach, 42, Rupert lane.

5th Dec., 1861. Jackson, William, Fleatham house, St. Bees.

23rd Nov., 1848. Jacson Charles R., Barton hall, Preston.

9th Jan., 1868. *Jones, Rev. Charles, B.A., Rock Ferry.

23rd Sept., 1854. Jones, Edward, The Larches, Handsworth

3rd May, 1849. *Jones, Morris Charles, F.S.A., F.S.A. Scot., 20, Abercromby square, and Gungrog, Welshpool.

2nd Dec., 1858. *Jones, Robert, 7, Batchelor street.

K

P. 3rd May, 1849. Kendrick, James, M.D., Warrington.

5th Nov., 1863. *King, John Thomson, Clayton square.

4th Dec., 1862. *King, Col. Vincent Ashfield, 16, Baltic buildings, Redcross street, and Point of Ayr, Oxton.

L

23rd Nov., 1848. Langton, William, Manchester and Salford Bank, Manchester.

5th Sept., 1872. **Ledward, Septimus*, The Albany, Oldhall street, and Hill Bark, Frankby.

23rd Nov., 1848. Legh, G. Cornwall, High Legh, Knutsford.

1st Dec, 1859. *Legh, Capt. W. J.*, M.P., Lyme park, Disley, Stockport.

M

6th March, 1862. McCorquodale, Colonel Geo., The Willows, Newton-le-Willows.

15th April, 1858. *McInnes, J., 23, Lightbody street.

5th May, 1853. **Macrae, John Wrigley*, 22, Hackin's hey, and Seaforth house, Seaforth.

1st Dec., 1859. Marsh, John, Rann lea, Rainhill.

P. 5th June, 1851. Marsh, John Fitchett, Hardwick House, Chepstow.

1st Dec., 1864. Marson, James, Hill Cliff, Warrington.

5th Sept., 1872. *Mason, Hugh*, Ashton-under-Lyne.

18th Feb., 1874. *Mawdsley, James P., 4, Castle street, and 36, Falkner square.

P. 23rd Nov., 1848. *Mayer, Joseph, F.S.A., M.R. Asiat. S., F.E.S., F.R.Soc. North. Ant. Copenhagen, Associé etranger de la Société Impériale des Antiquaires de France, Hon. Mem. SS. Antiq., Normandie, l'Oûest, la Morinie, d'Emulation d'Abbeville, &c., Bebington, Vice-President.

20th March, 1876. *Mercer T. W., 16, Kensington.

3rd Dec., 1857. Moore, Rev. Richard R., A.M., Cropper's hill, St. Helens.

P. 8th Nov., 1849. Moore, Rev. Thomas, A.M., Midleton College, County of Cork.

P. 23rd Nov., 1848. *Moss, Rev. John James*, LL.D., East Lydford Rectory, Somerset.

4th April, 1872. *Moss, Sir Thomas Edwards, Bart., Otterspool.

11th Dec., 1856. Myres, John James, 26, Glover's court, Preston.

N

H. S. Ches., 1857. *Naylor, Richard*, Hooton hall, Chester.

10th Dec., 1874. Nicholson, Edward James, Thelwall lea, Warrington.

23rd Nov., 1848. Nicholson, James, F.S.A., Thelwall lea, Warrington.

12th Dec., 1872. *Norbury, Alfred, 56, Hope street.

5th Sept., 1872. Norreys, R. H., J.P., D.L., Davy-Hulme hall, Manchester.

29th Sept., 1854. *Nottingham, John, M.D., F.R.A.S., F.R.Soc. Northern Antiquaries, Copenhagen, 20, Roscommon street.

O

10th Dec., 1874. *Oulton, William, 22, Preeson's row, and the Hill side, Gateacre.

P

23rd Nov., 1858. *Paris, Thomas Jeremiah, 68, Lord street.

18th Dec., 1856. Parker, Robert Townley, Cuerdon hall, Preston.

P. 12th Jan., 1871. Paterson, James, Warrington.

9th Feb., 1871. Pearson, John E., Golborne park, near Newton-le-Willows.

11th Dec., 1856. *Pedder, Henry Newsham*, 9, Queen's gate. Prince Albert road, South Kensington, London, S.

21st Mar., 1860. *Petty, Thomas Shaw*, Stockbridge, Ulverston.

P. 6th Jan., 1849. *Pieton, James Allanson, F.S.A., Queen bldgs., Dale street, and Sandyknowe, Wavertree.

3rd May, 1849. Pierpoint, Benjamin, St. Austin's, Warrington.

23rd Nov., 1848. Pilkington, James, Park pl. house, Blackburn.

10th Feb., 1853. *Platt, Robert*, Stalybridge.

12th Mar., 1857. *Preston, Geo. Theo. Robert, 13, Vernon street, Dale st., and Belmont house, Belmont rd.

R

10th Dec., 1874. *Rathbone, S. G., Yew Tree house, Allerton.

P. 29th Dec., 1854. Rees, William, 4, Cavendish place, All Saints, Manchester.

25th Feb., 1873. *Richards, W. H., Mellor's buildings, Exchange street East.

20th April, 1876. Rigby, John, 21, Market street, Bury.

P. 30th Nov., 1871. Rimmer, Alfred, Boughton, Chester.

23rd Feb., 1871. Robinson, George S., The Greenaw, New Brighton.

20th Dec., 1855. Robin, Rev. P. R., A.M., Woodehureh, Birkenhead.

10th Dec., 1874. *Rogerson, George R., F.R.A.S., F.R.G.S., 5, Cook street.

20th April, 1876. Roper, William, Lancaster.

15th April, 1858. Rowlinson W., Windermere.

25th Sept., 1854. Rylands, Peter, M.P., Bewsey house, Warrington.

P. 13th Dec., 1854. Rylands, Thomas Glazebrook, F.L.S., F.G.S., Highfields, Thelwall, near Warrington.

3rd Nov., 1870. Rylands, John Paul, F.S.A., Highfields, Thelwall, near Warrington.

10th Dec, 1874. Rylands, William Henry, Highfields, Thelwall, near Warrington.

S

21st Mar., 1872. *Salisbury, Most Noble the Marquess of*, Hatfield, Herts.

10th Dec., 1874. **Sallhouse, Rev Robert*. F.R.G.S., St. James' parsonage, West Derby.

6th Dec., 1855. *Sandbach, W. R., Bank buildings, Cook street, and the Cottage, Aigburth.

5th Sept., 1872. *Sefton, Right Hon. the Earl of, Lord Lieutenant of Lancashire, Sefton house, Belgrave square, London, and Croxteth hall.

2nd June, 1853. *Sharp, William*, Albert terrace, Albert gate, Hyde park, London.

23rd Nov., 1848. *Simpson, Rev. Samuel*, A.M., Kingston house, Chester.

4th April, 1872. Skelmersdale, The Right Hon. Lord, Lathom house, Ormskirk.

P. 16th April, 1863. †Smith, Henry Ecroyd, Shotley Bridge, County of Durham.

P. 20th Feb., 1868. *Smith, Samuel, Jun., 8, Croxteth road, Prince's park.

10th Dec., 1874. Standish Rev. Robert, B.A., Newton-le-Willows

3rd Jan., 1856 *Staniforth, Rev. Thomas*, M.A., Storrs, Windermere.

5th Feb., 1863. Steele, Alexander, LL.D., Strathallan hall, Douglas, Isle of Man.

13th Dec., 1855. *Steiner, F.*, Hyndburn, Accrington.

6th April, 1876. *Stewart, Rev. Alex., M.A., 29, Sandon street.

4th Mar., 1852. *Sykes, James, 115, Dale street, 78, Rodney street, and Breck house, Poulton-le-Fylde.

T

5th Sept., 1872. *Taylor, James*, Whitby hall, Wigan.

18th Nov., 1869. *Thomas, George, 1, Rhoda Villas, Rock lane, Rock Ferry.

17th Jan., 1867. *Thorp, Henry*, Chatham mills, Lower Ormond street, Manchester.

P. 8th Dec., 1851. *Tinne, John A., F.R.G.S., Briarley, Aigburth.

8th Jan., 1852. *Torr, John, M.P., Exchange buildings, and Carlett Park, Eastham.

H.S. Lanc., 1857. Towneley, Charles, Towneley, Burnley.

18th Dec., 1874. *Treffry, E. E., 11, Rumford place.

V

23rd Nov., 1848. *Varty, Thomas*, Stag-stones, Penrith.

P. 16th Dec., 1869. Vaudrey, Benjamin Llewellyn, Tushingham hall, Whitchurch.

4th April, 1872. Vaudrey, Rev. D., Darley Rectory, Matlock.

12th Dec., 1872. Veevers, R. Woningworth, Fulwood park, Preston.

14th April, 1853. *Vose, James, M.D., 5, Gambier terrace, Hope street.

W

P. 11th Dec., 1873. Waddington, W. A., Piccadilly road, Burnley.

11th Dec., 1856. *Walmsley, Thomas*, Preston.

12th Dec., 1867. *Walmsley, Gilbert G., 50, Lord street.

6th Mar., 1851. Warburton, Rowland Eyles Egerton, Arley hall, Cheshire.

P. 5th Dec., 1861. *Waterhouse, Nicholas, Durning road.

12th Dec., 1872. *Watson, R. A., Great Crosshall street, and Rotherwood, Ivanhoe road, Prince's park.

17th Dec., 1857. *Watts, Sir James*, Manchester, and Abney Hall, Cheadle.

1st Feb., 1849. *Webster, George, 6, York buildings, Dale street, and Overchurch hill, Upton.

P. 3rd Jan., 1856. *Welton, Thomas A.*, F.S.S., 6, Offerton road, London, S.W.

13th Mar., 1862. Westminster, His Grace the Duke of, 33, Upper Grosvenor street, London, and Eaton hall, Chester.

6th Feb., 1873. *Whiteman, James Walter, 55, Church street.

2nd June, 1853. *Whitley, George, 57, Church street, and Bromborough.

9th Oct., 1854. Whitley, Rev. John, A.M., Newton rectory, Newton-le-Willows.

6th June, 1850. Whitley, Rev. William, B.A., Catsclough, Winsford, Cheshire.

14th Feb., 1861. Wilson, J. M., Hardshaw street, St. Helens.

13th Nov., 1866. *Winder, Thomas, Coniston house, Breeze hill, Walton, and 3, Pownall street.

7th Mar., 1850. *Winmarleigh, Rt. Hon. Lord*, Bank Hall, Warrington.

7th Dec., 1865. *Wood, R. H.*, F.S.A., F.R.G.S., Corr. Mem. Soc. Antiq. de Normandie, Penrhos house, Rugby.

7th May, 1855. *Woodhouse, John George*, Burg hill, Hereford.

10th Dec., 1874. Worsley, James E., Winwick cottage, Newton-le-Willows.

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	13th Sept., 1870.	Stokes, George Gabriel, M.A., D.C.L., LL.D., Sec. R.S., Lucasian Professor of Math. in the Univ. of Cambridge, Lensfield Cottage, Cambridge.

13th Sept., 1870. Tyndall, John LL.D., Ph.D., F.R.S., F.G.S., Professor of Nat. Philos. Royal Institution, Albemarle street, London.

P. 20th Jan., 1870. Walcott, Rev. Mackenzie E. C., B.D., F.S.A., &c., Præcentor and Prebendary of Chichester, 58, Belgrave road, London, S.W.

P. 27th Sept., 1854. Wright, Thomas, A.M., Hon. M.R.S.L., Member of the Institute of France, Fel. Roy. Soc. North. Antiqs. Copenhagen ; Hon. Mem. of the Soc. of Antiquaries of France; Corresp. Mem. Soc. Antiq. Normandy; of Soc. Antiqs. Scotland, &c., 14, Sydney street, Brompton, London.

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TRANSACTIONS.

A REEVE'S ACCOUNT OF A CHESHIRE MANOR, FROM MICHAELMAS 46 EDW. III (1372), TO MICHAELMAS IN THE FOLLOWING YEAR.

By William Beamont, Esq.

(Read 24th February, 1876.)

In the possession of the writer of this note there is an account for one year, from Michaelmas, 46 Edward III, (1372,) to the same period in the year following, of the *prepositus* or reeve of Sir Henry de Grey, knight, lord of the manor of Eton, near Tarporley, whose family was afterwards ennobled by the title of Baron Grey of Ruthin. Eton seems formerly to have been inseparably associated with the adjoining manor of Rushton, of which manor Stephen de Russeton, once high in authority in the county of Chester, was probably a native. In 1264, when the preparations made to defend Chester against the barons were rendered unnecessary by the cession of the earldom of Chester to their leader, Simon de Montfort, and the conclusion by him of a treaty with the Welsh, Earl Ferrars took quiet possession of the city. On the 4th January following (being the octave of the Holy Innocents), Henry de Montfort, the new earl's eldest son, received from the citizens, nobles, and free tenants of the earldom their homage and assurance of fealty; and on the eve of the Epiphany he met Llewellyn son of Griffin, and Griffin son of Madoc, at Hawarden,

and, exchanging with them the kiss of peace, put a short stop to the war which for more than eight years had raged between Cheshire and Wales. He then appointed Lucas de Taney justiciary, and Stephen de Russeton to be the earl's deputy, and confirmed his adherent, Simon de Blanchminster, in the abbacy of St. Werburgh's.* The hall of Rushton seems to have early fallen into decay, for on 20th May, 20 Henry VI (1442), William Troutbeck purchased from the Lord Grey of Ruthin "all the timbre of an old duff howse without the site "of the manor of Rushton and all the timbre of all the houses "withinne the said site, with the helyng of the said houses "and all the castyng stones under the said timbre and all the "chimneys of ston, goters ledde and all other things to the said "timbre p'teyninge, except the soile of the said site and the "brigge that is over the pele of the said site."† Rushton and Eton are again found united in a plea taken in a Cheshire assize in eyre in 14 Henry VII, when George Grey, Earl of Kent, the then lord of the manor of Rushton and Eton, claimed to punish in his manor court all offenders against the assize of bread and beer by amercing them three times, and for the fourth time setting offending bakers in the pillory, carting wrongful brewers in the tumbrel, and placing common scolds in the thewe or cucking stool.‡ Mr. Watson, in his History of the Earls of Warren and Surrey—a beautiful early specimen of provincial typography, which issued from the Warrington press in 1772—by mistake calls Rushton and Eton "Bushton and Ayton."§ Again, at a far later period Eton and Rushton, still united, occur as the scene of a skirmish in the time of the civil war. On June 9th, 1645, we are told, "the enemy "marched out of Chester, 6 companies of foot and three of "horse, and took Captain Clegg and all his troop of horse in

* Introduction to *History of Cheshire*, xxxi. † *Cheshire Records.*
‡ Cowel's *Interpreter*, *sub voce* "Theu," and Harl M.S., 2115.
§ Vol. i, 218, and *Hist Ches.*, iii, 385 *in notis.*

"their quarters, but they were all quickly rescued by the Tarvin "forces, and in pursuit of the enemy in Eaton and Rushton "and about the forest they took two captains and other "officers and 210 common soldiers, and slew 12, with the loss "of 3 men. They also took one barrel and many bags of "powder, and 300 arms."*

Henry Carte, the reeve whose account is before us, has filled a long parchment roll with his year's proceedings. The account which is in crabbed Latin, is much contracted, ill written, and worse spelt. It is not, therefore, very easily read. In the account, which is curious for its glimpses of rural economy and the expenses of a great house in old times, the reeve under separate heads has entered the various items of his receipt and expenditure, occasionally referring to his vouchers or tallies for them. The sum of the items is set down in Roman numerals at the end, and the aggregate total is placed at the bottom, but as the different sums are not placed in columns immediately under each other, according to our present method, it must have been very difficult for the auditor, who appears to have gone carefully through the account, and to have checked, altered, and corrected it throughout, to test its accuracy by the ordinary mode of adding up its columns. As to who or what the reeve was who made this account, we may take from a contemporary poet a general description of such an officer, after which we shall give a few particulars extracted from his account.

The reeve was a slendre colerike man,
His berd was shave as neighe as ever he can,
His here was by his eres round yshorne.
His top was docked like a preast beforne.
Full longe were his legges, and ful lene,
Ylike a staff, ther was no calf yseene.
Wel coude he kepe a garner and a binne:
Ther was no auditour coude on him winne.
Wel wist he by the drought, and by the rain,
The yelding of his seed and of his grain.

* Burghall's *Providence Improved.*

His lordes shepe, his nete, and his deirie,
His swine, his horse, his store, and his pultrie,
Were holly in this reves governing,
And by his covenant yave rechening,
Sin that his lorde was twenty yere of age,
Ther coude no man bring him in arerage,
There nas bailiffe ne herde, ne other hine,
That he ne knew his sleight and his covine.
They were adradde of him as of the deth.
His wonning was full fayre upon a heth,
With grene tres yshadewed was his place.
He coude better than his lord pourchase.
Ful rich he was ystored privily.
His lord wel coude he plesen subtilly.
To yeve and lend him of his owen good,
And have a thank, and yet a cote & hood.
A long surcoat of perse upon he hade
And by his side he bare a trusty blade.

(Prol. to *The Canterb. Tales.*)

Under the head of Issues of the Manor, there occurs an entry of vij*d.*, *de cor equino de mor. mort.*, meaning that so much was received for a hide stripped from the carcase of a horse which had died of the murrain.*

Of Wool the greater part is mentioned to have been sold by the parson of Bletchley, near Fenny Stratford, who seems to have been a friend or an official, or both, of the lord of Eton.

Under the head of Markets, ten shillings are put down as received from Geoffrey at the hall, farmer of the market at Fenny Stratford, which seems to have been one of the lord's manors.

There is entered under the head of Pasture Farm, a sum of xix*s.* vij*d.*, received for the agistment of the park between the festival of Holy Cross and the gule of August.

Under the Farm of Cows, there is an entry of v*s.* (*de firma* x *gallin p. an.*), the farm of ten hens let for a year.

For Corn Sold, there is an item of a quantity of wheat sold at iv*s.* x*d.* a quarter. Adam Smith gives us no return of the price of wheat in 1372; but in 1369, that is three years before, the price, he says, was xxiv*s.* a quarter; and in 1379 it was

* *Archæolog. Journal*, 1858, p. 360.

only iv*s*. These fluctuations in old times were evidently very great, and must have caused much distress.

Under Perquisites of Courts, it is stated that three courts were held this year at Eton and two at Stratford, and that the first Eton court produced xliv*s*. xi*d*., and the first Stratford court xxxv*s*. vi*d*.

Under the Sale of Work, fivepence halfpenny is mentioned to be received for work done by the saddler at Bletchley, two shillings and twopence for work done by John Chapman, the farmer at Waterfall, and two shillings for leading hay and corn for the Eton tenants.

Other Sales produced a sum of lxii*s*. vii*d*. ob. The total sum received from all sources is put down at l*li*. xii*s*. ob. quar.

After the receipts come the payments, which, like them, are entered under several heads, as—

Cost of Ploughs, under which we have four shillings or one penny per shoe entered for shoeing eight bullocks on all fours, and eight others on the two fore feet only. It does not appear how the shoes were put on whether by nailing them to the hoof, or only fastening them on the feet by twisting, as is still done in some parts of France.

Under Cost of Wains, two pair of wheels bought at the fair are entered as having cost vi*s*. viii*d*. Putting arms to the wain after it had gone three times to London and Shirland (in Derbyshire) cost vi*d*.; the same sum also was paid for grease for the wains, and a skin of whit leather for the wain cost xvi*d*.

Under Horse Shoeing there is a charge of vi*s*. for shoeing three cart horses for a year.

Four bushels of salt, expressly stated to be for the servants' pottage, are entered under the head of Small Payments, and put down as having cost iii*s*. iv*d*., or ten pence the bushel. This necessary of life is one of the articles which age has made cheaper. A ton of fine salt can now be manufactured and sold for six shillings. The expenses of the reeve, the park-keeper,

and seven hired servants at Christmas were thirteen pence half-penny. Their offerings at the same season and at Easter are put down at ninepence, and candles at the Feast of the Purification cost half that sum. The lord of Eton coming to his house, a carpenter was employed to make tables, tressels, forms, and other things against his arrival, and was paid for it ii*s.* iv*d.*, or at the rate of four pence a day. In a Norfolk house, as we learn from Harrold's *Gleanings*, a good sum of money was paid for repairing the forms broken at an interlude which was acted in the hall on the Sunday after twelfth day. It is to be presumed that the repair of the forms at Eton was not rendered necessary by any such revel there. The preparation for their lord's arrival extended to other departments of the household, and a cooper was employed on the above occasion for four days at the same wages in making tubs, barrels, and other vessels for storing ale and salting venison. Cord for a fishing net cost viij*d.* A roll of parchment for the court and for the reeve's account cost ij*d.* And a sling, such as that which is represented in the arms of the Leches of Carden, given in Ormerod's Cheshire, cost only a penny. The Eton sling was used to kill crows. Slings to drive away the birds from the corn at harvest time are still used in Egypt, and are very effective for the purpose by the cracking noise they make.

Under the head of EXPENSES FOR THE SHEEP, four flagons of tar are entered as costing ij*s.* viij*d.*, and four flagons of grease for mixing the same iv*d.* This mixture was for anointing the sheep; and the same or one like it, and for the same purpose, was known to Virgil, whose receipt for it will be found in his *Georgics* (iii, 446).

> They oint their naked limbs with mothered oil,
> Or from the founts where living sulphurs boil;
> They mix a medicine to anoint their limbs
> With scum that on the molten silver swims;
> Fat pitch and black bitumen add to these,
> Besides the waxen labour of the bees.

This practice of anointing the sheep still prevails, and an old farmer's description of it may be seen in *Rural Economy of Yorkshire,* a work published by the Surtees Society.

The next payment which occurs in the Reeve's account, under the head Expenses for Sheep, is curious. For 63 sheep folded on the lord's land to manure it, a penny per head was paid to their owner. No such payment would be heard of in modern farming, though some of the early and very sanguine promoters of railways, before the first line was opened, used to contend that cattle might be carried from place to place, for the ordure they would make on the way.

Under the head Repairs of Buildings, 400 bundles (clams) of laths for lathing the Great Grange were purchased at the cost of viii*d.*; and Adam Hulmore repairing the granary one day was paid for his labour iv*d.*, and for four bushels of lime the same sum. The Great Grange must have been a timber building, resembling a Dutch barn.

Amongst the Stock Bought were 24 pullets to be fed up for capons, which were purchased for ii*d.*

Under the head of Corn of Various Kinds, four pence a quarter is entered as paid for grinding 43 quarters and one bushel of wheat, 26 quarters and seven bushels of peas and beans, and 95 quarters of draget. This last grain, called also dreg, was sometimes mixed with rye to form mestilio or meslin. Old Tusser, who treats of it, gives this advice as to the sowing of it:—

> Sow barley and dreg with a plentiful hand,
> Lest weed, stead of seed, overgroweth thy land.

and in another place he shows that it was malted like barley—

> Thy dreg and thy barley go thrash out to malt.

Under the head Harrowing and Sowing, there is an entry of xviii*d.*, given as a *medeschepe*, a word which occurs in some

pleadings of the time of Edward I, and which Mr. Hampson says was a supper given to the labourers at Harvest Home, and which was so called because mead was usually drunk at it;* but the name was more probably given it to distinguish it from boon work, that being supposed to be rendered without reward, while this was done for meed. It was for a service the exact opposite to this that Orlando so passionately commended old Adam—

> O good old man! how well in thee appears
> The constant service of the antique world,
> When service sweat for duty, not for meed!

If our conjecture as to the origin of the word is right, then medeschepe is derived from "meed," a reward, and "ceapan," to buy.

The next entry of Autumn Charges gives us a glimpse of some other customs now also obsolete. On seventy neighbours employed in mowing the lord's wheat at a *Love bone*, there was expended iv*s.* vii*d.* in ale, which sum bought fifty-five *lagenas*, or flagons, of that liquor. If the *lagena* was a bottle, the ale was a penny a quart; if it was a pottle, the price would be a half-penny; but if, as is more probable, the *lagena* contained a gallon, then the price would be only half a farthing the pint.† On these same neighbours there was also expended at the *Love bone* fifteen pence in cheese, and they had also one quarter of bull beef, two sheep, and bread from the hall, *ad libitum* (as we suppose). A *Love bone* speaks it own origin: it is boon service rendered for love. John *Lovebone* was vicar of Wadebridge in Devonshire in the fifteenth century, and the frequent occurrence of this name seems to show that the *Love bone* in old times prevailed very extensively. Under such circumstances it is singular that the word is not found in our

* Hampson's *Medii. Ævi Calendarium*, ii., 268; Cowel's *Interpreter;* and Jacob's *Dictionary*.

† *Journal of the Archæolog. Inst.*, 1862, p. 354.

archaic dictionaries. But Piers Plowman evidently had it in his mind when he makes his auditor say—

> I kan holde love days and here a reeve's rekenyng,
> And in canon nor in decretals I ken noght rede a lyne.

Boons which were at first a favour, in process of time grew to be accounted a right and were required accordingly. On sixty-four tenants coming, according to custom, at the *Bederepe*, to help the lord at shearing time, 42 flagons of ale, of the same quality and price as before, were expended. This allowance was less liberal than that mentioned before, because these were the lord's tenants, and not mere neighbours. But the tenants had three-quarters of bull beef which gave each of them a cut worth a penny; and they had 16 pennyworth of cheese, of which each had a slice worth one farthing; and they had bread from the hall as before. In Stoneleigh the lower tenants paid a common fine, and at the general reap in harvest, called a *Bederepe*, the sokmen, with their tenants, were summoned to reap the lord's corn; the sokmen to ride up and down on horseback, with wands, to see that they worked well, and to take notice of, and amerce in the lord's court, those who either made default or laboured idly.*

The *Bederepe* is another custom which, since the reeve of Eton wrote his account, has fallen into such disuse that even its name is forgotten. It is mentioned, however, among the Cheshire customs in the Domesday Survey, and in Duncange, the Surtees' Boldon Book, and Hampson's Medii Ævi Calendarium, under the words *Precatio* and *Bederepe*. A story is told of a humourist who, having a field of rye to cut, drew and sent round to his friends a sketch of a death's head and cross-bones: a *memento mori*, which, knowing the man, they understood to mean, "Send me men to mow rye," and the men were sent accordingly. So the *Bederepe* was like the

* *Forest of Arden*, p. 25.

American custom called a *Bee*, where, when a settler wants help, the whole neighbourhood at his first bidding comes to him to give him aid, and so the *Bederepe* explains itself. It means the tenants' attendance to reap at the prayer or bidding of their lord. There was also paid to 145 labourers, mowing the lord's land, 48 shillings, or about a groat a piece.

Three pairs of gloves which were bought for some of the servants in autumn, cost sixpence, or twopence the pair.

Under the head of the REEVE'S WAGES, Master Henry Carte, whose stated hire was a penny a day, received this year no more than twenty-three shillings and sixpence, because from St. Mary Magdalen's day to Christmas he had his table in the hall, and for that time, which was eleven weeks, his pay was stopped. The reeve does not seem to have been very liberally treated.

Under the head of SERVANTS' WAGES no money is entered as paid, but it is stated that each servant, by which is meant a servant in husbandry (for the wages of the domestic servants have been mentioned before), took half an acre of wheat and half an acre of oats in autumn in lieu of his year's wages. Produce was then more plentiful than money. A century and a half later, the historian of Whalley informs us that the wages of servants in husbandry were for men xvi*s.* viii*d.* a year, and for women x*s.* In some places, as at Rieton, in the Forest of Arden, some of the labour in husbandry was done by the small tenants, who paid a certain portion of their rent in money, and rendered service for the remainder, ploughing one day each in winter and one day in lent, and mowing, raking, making hay, carrying corn, and gathering nuts at another time.*

The SENESCHAL'S WAGES are entered separately under that head, and John Garner, who filled the office, over and above

* *Forest of Arden*, p. 24.

his yearly salary of xl*s.* was allowed three shillings and twopence for each of the two courts he had held during the year. The holding of the courts and the payments for them are vouched by the parson of Bletchley.

A sum of twenty-six shillings was paid this year for the Lord's Expenses on his visits to Eton, and the payment is vouched by a sealed tally.

Under the head of Extra Expenses, Thomas Kat is put down as receiving twelve pence for carrying a letter to the lord at Wilton, in Herefordshire, which is nominally about the same sum as the postage of a letter from London into Lancashire before the introduction of the new system, but a shilling was of far more value in Thomas Kat's time, and yet he must have been but poorly paid for carrying a letter so far. Letter-carrying, however, does not seem to have been an overpaid service in old times. William, the messenger of Edward I, who carried that monarch's letter from Rhudlan to London in 1281, only received a shilling for his pains, although the letter was a royal one, and he a king's messenger.* Thomas Kat made many other journeys on similar errands for the lord of Eton to Shirland, Caulesand, and other places, the happy invention of the post office being then unknown.

The wages and expenses of John Mey, going with a wain, two drivers, and nine horses in July to Shirland, to bring men and victuals to Eton before the lord's coming there cost ix*s.* ix*d.* Shirland, where the De Greys had a seat, and where some ancient monuments of the family still remain, was near Alfreton in Derbyshire. The wages of Henry Taylor, with the aforesaid wain, drivers, and horses, going to London to fetch wine before the lord's arrival, were vii*s.* xi*d.* The expenses of Reginald de Grey, a member of the lord's family, as vouched by a tally, were ii*s.* vi½*d.*

The expenses of Geoffrey de Grey, probably son or grand-

* *Hist. Ches.*, Pref., xxxii.

son of the Lord Henry de Grey, amounted to xv*s.* viii*d.*, and were vouched by two tallies. The wages and expenses of Robert Taylor going into Essex to prepare my lord's houses and things for his and my lady's reception were xx*s.* John Long, for fetching my lady's saddle from London and taking it to Shirland for her use, was paid i*s.* vi*d.* each way. One hundred and eight men, who were employed four days in enclosing and fencing some land called Wrytele, received for the first day ii*s.* iii*d.* in ale, and two shillings in butchers' meat; for the second day i*s.* vi*d.* in ale, vii*d.* in butchers' meat, and iii*d.* in cheese. They had their bread all along from the hall; and the whole is vouched by the same John Mey, who has been mentioned before, and who is subsequently called the bailiff, and who in that character renders a minute account of the issues of the grange, showing how all the lands were sown, what crops were reaped, and how they were disposed of.

	£	s.	d.
The whole sum which the reeve received was.....	50	12	$0\frac{3}{4}$
And the total sum which he paid was.....	36	8	$2\frac{1}{2}$

Reginald de Grey, who has been mentioned in the account, was probably the grandson of Lord Henry de Grey, the Lord of Eton, and the plaintiff in the celebrated case of chivalry with Sir Edward Hastings, respecting the bearing of the unabated coat of that family, which was tried in the Court of Chivalry, and in which sentence was given in his favour in 11 Henry IV, when Sir Edward was ordered to pay all the costs, and to forbear using the disputed coat at any time thereafter.* He was probably also the same Reginald de Grey so well known in the wars of those times, and who, besides serving in the public wars of his day, contrived to engage in a little war on his own private account with the celebrated chieftain, Owen Glendower. In this private war he

* *Hist. Ches.*, ii, 121.

had the misfortune to be worsted, and taken prisoner by Glendower, who fixed his ransom at 12,000 marks, which shows either his reputed riches or the great value set upon him, or both. About the year 1402, while he was still in the hands of Glendower, the king, anxious to secure Ruthyn Castle from falling, like its master, into Glendower's hands, where it would have been a dangerous possession, wrote a letter, which is still to be seen in the Cheshire records, and in which he commanded his Chamberlain of Chester, the Bishop of St. Asaph, his constable of Chester Castle, and the rest of his officers there, to send to the Castle of Ruthyn a sufficient number of men at arms to aid the constable of Ruthyn Castle in defending it, the Lord de Grey of Ruthyn having been made prisoner, and his troops discomfited in the inroad of Owen Glendower. *" Lettre du roy au rev'rent pere en Dieu " evesque de Seint Asaph, Chamb'lein et au conestable et as " autres officiers du chastel de Chestre, d'envoier devers le " chastel de Ruthyn un suffisant nombre des gentz pour " doner aide au conestable du dit chastel apres que le Sire " de Grey de Ruthyn fut pris deins l' invasion de Oweyn " Glendowry et des gentz discomfitz."*

In a posthumous dramatic poem by the late lamented Dr. Rowland Williams, where his countryman Glendower is shown not to have been a conspirator with Hotspur, nor to have deserted him at Shrewsbury, and has made the Welsh chieftain, who for 15 years defied the power of England, a patriot hero, and placed him in a light far different from the old chroniclers, De Grey, when made prisoner, is represented as asking his captor his fate, and the chieftian as answering—

> I hold your Lordship's life too precious far
> To waste with murderous prodigality.
> Keep it, my lord, to serve what side you will,
> And for some passing service to our cause,
> We cannot feast you with such lordly pomp
> As when you graced the royal coronation,
> Receiving for your office damask payment;

But in our *hunger-stricken hills*, with us
Poor pensioners of nature's sterner mood,
My lord will please a season to abide,
Until his ransom fit his dignity.

Although the lord of Eton lived within his means, and his income, as we have seen, exceeded his expenditure, the surplus was but small, and it would have been long before it had amounted to twelve thousand marks, especially at a time when banks were unknown, and there were no such investments as in these days make capital swell and increase to large proportions. The king, who felt the hardship of his soldier-servant's case, sent an ambassador to negotiate for his release, who, having stated his errand, has, according to the poet, this answer from Glendower :—

We know his grace of Lancaster's good will;
And for his ravage of our territory,
As well as older outrage from De Grey,
We might exact some debt; but since our mind
Was never bent on bloodshed, and my lord
Is weary of our hospitality,
. . . . . .
We will release him for ten thousand marks.
His lordship best can judge, if life and air
Are worth to him so much, we rate his worth
Too highly far for any meaner price;
And for our personal right we stipulate
He shall be bound nor to invade our land,
Nor any wise molest our tenantry;
But in all loyal peace and harmony
Dwell as our people dwell, respecting laws
And customs by our princely will maintained!

Collins, in his peerage (under the earldom of Stamford), gives a somewhat different account from ours of the De Grey pedigree; but we incline to the opinion that Reginald De Grey, the prisoner of Glendower, was the grandson of the Lord Henry De Grey, and the person of his name who occurs in the Reeve's account.

THE ETYMOLOGY OF PLANT NAMES.

By Thomas Comber, Esq.

(Read April 6th, 1876.)

Part I.

Fruits and Edible Berries.

The Etymology of Plant names is a subject that has always possessed a great attraction for me, ever since I first read Dr. Prior's work on the "popular names of British Plants;" a most delightful book, not only to botanists, but to all who take an interest in the history of the English language. I shall have occasion to refer to it frequently in the present paper; and am indebted to it for even more information than is hereafter specially acknowledged.

The charm of the subject, as of Etymology generally, lies in the history contained in the very names themselves, which often carries us further back than any human records, to a time preceding even the earliest traditions, when our remote Arian ancestors had not yet acquired the art of writing, nor begun to disperse from their original Asiatic home. Each name has more or less of a pedigree, and by following this backwards from one language to another, we can often trace the name to a stage in which it is no longer a mere conventional term, but possesses a distinctive meaning of its own. It may describe the plant itself, or some of its real or supposed properties; or it may indicate some use to which it has been put, or frequently the country from which it has been brought: and in whatever language a name has such significance, in that we may generally conclude that it had its origin. Thus "*Daisy*" or "*Day's eye*" is no doubt a name

coined in our own Anglo-Saxon mint, for it expresses in English the habit the plant has of opening its flowers during the day, and of closing them at night. The name "*Dandelion*" again is of French origin, for in its French form *Dent de leon*, or lion's tooth, it tells us of the jagged shape of the leaf. Our "*Peach*," which is in French "*Peche*" (formerly written *Pesche*), and in Italian "*Pesca*," possesses no significance in these languages; but if we follow it back to its previous stages, to the Latin "*Persica*," and the Greek μηλον περσικον, it informs us very clearly that this fruit reached Greece and Rome from Persia.

Professor De Candolle has made use of the evidence thus afforded us by Etymology to aid in determining the probable native countries of plants in general cultivation; and, perhaps, from a purely botanical point of view, it is this aspect of the question that possesses the greatest interest. Wherever a plant has an original significant name, it may be fairly inferred that it is indigenous, unless the name itself implies the contrary. We may confidently reckon the Daisy as indigenous in England, the Dandelion in France, but the Peach as only introduced in South Europe. The converse, however, that where a plant's name is not original, the plant itself is not indigenous, does not hold equally good. It is true that when a foreign plant is introduced into a country, it generally brings with it its foreign name,* so that when we speak of *Ipecacuanha* or *Tobacco*, of an *Orange* or a *Gherkin*, we use words which testify that the two first are native in America, and the two last in Asia; but it by no means follows that all plants with foreign names are importations, that the *Dandelion*, because we call it now by a French name, was brought to us from France, or that our *Violets* and *Campions* are only naturalized plants in Britain. This must be borne in mind, or we shall be liable to push the etymological

* There are exceptions, e.g. *Pine-apple* and *Snow-flake*.

argument too far. An original name indicates nearly always a native plant: a foreign name raises some slight suspicion that the plant has been introduced; and, if this be confirmed by other evidence, it points out to us from whence the plant has come, and sometimes the route by which it has travelled.

It is also necessary to remember that there are two ways in which a significant name may pass from one language to another. It may (1) be adopted, as it stands in the first language, or in a more or less corrupt form; or (2) its *meaning* may be translated, and expressed in the second language. As an example of each mode, I may refer to the Greek name χελιδονιον, derived from χελιδων, a swallow, probably from the absurd belief, mentioned by Dioscorides, Pliny, and other authors, that swallows use the plant to restore sight to their young when they cannot see.* The Greek name has passed into Latin as "*Chelidonium*;" thence into French as "*Cheli-doine*," and into English as "*Celandine*," and thus ceases to be a significant name in those languages. The Germans, however, translate the meaning of the Greek word into their own language, and say "*Schwalben-kraut*"; which again has come into English as "*Swallow-wort*." It is evident that this last, although in a manner expressive, is no more an original name than "*Celandine*"; both have equally descended from the Greek. Further complication arises when in thus translating the meaning of a name a mistake is made; as when the Germans resolve the Latin "*Centaurea*" into "*Centum aurei*," and render it "*Tausend-gülden-kraut*"; or when the English confuse the Latin "*Vaccinium*" with *Vaccinum*, and translate it "*Cowberry*."

When a plant has an entirely different and independent name in the several families of Arian languages, the presumption is that it either did not grow, or at any rate was

* Diosc. II, 211. Pliny's statement is "Hac enim hirundines oculis pullorum "in nido restituunt visum, ut quidam volunt, etiam erutis oculis."—(Lib. xxv, 50.)

not recognised by name, in the original abode of the Arian race; but that it received its varying titles as the Arian peoples met with it in the countries to which they afterwards spread. When, on the contrary, the names of a plant in different languages are etymologically related to one another, the affinity may arise from the plant having been known to, and received a distinguishing name from, the people speaking those languages before they separated from each other; in which case the change in the form of the name will generally be governed by certain known laws. The similarity of name may, however, arise also from other causes. Long after the separation of one nation from another, and the consequent divergence of their respective languages, a plant may be introduced from the one to the other, and bring with it its foreign name, as the *Peach* has brought its original Latin name, and the *Orange* its original Sanscrit name, in a corrupt form, into our English language; but in cases of such, what I may term lateral, transmission, the phonetic corruption of the name is generally more irregular. Even when the plant itself has not been introduced, in many cases a foreign name is imported into a language, and supersedes the native name which the plant originally bore. For instance, with us the alien word "*Dandelion*" has almost entirely supplanted the coarse vernacular name, descriptive of the plant's medicinal qualities, which survives now only in some parts of England. It is therefore necessary, when we use Etymology as an aid in Botanical Geography, to exercise great care, and discriminate rightly from what cause the similarity of name arises.

The importation of foreign names, to which allusion has been made, is particularly noticeable in a language so composite as our own: and the large foreign element amongst English plant names, now in use, has been thus accounted for by Dr. Prior. In the earliest stages of civilization, distinctive names were not given to every species of plant,

but only to those which attract attention from being useful for food, medicine, or other purposes; from their beauty; or from the injury which they inflict as weeds. Consequently we find that "our fruit and timber trees, the cereal grains, "and several pot herbs and medicinal plants have the same "(names) at the present day, as they bore a thousand years "ago; but by far the greater number of our other species "have only such as have been given to them during the last "300 years. These (names) for the most part were intro- "duced from abroad; for in the accurate study of living "plants, the continental nations took the lead, and our own "early herbalists did little more than ascertain what they "meant, and apply their names to our own plants." Comparatively recent names I do not propose to take into consideration, but merely older ones that have a longer history, whether in our own or in some other language. Even when so restricted, the subject is too large to be undertaken in a single evening, and we had better confine ourselves to-night to the names of fruits and edible berries.

Properly to investigate the etymology of a plant name, we should first trace it back to its earliest or significant stage, until, in fact, it almost ceases to be a proper name, and becomes descriptive: then from this starting point we should follow it through its various ramifications to its present forms in existing languages. By this means we can sometimes establish a relationship that would not otherwise be suspected; and show that names, now very unlike, have had a common origin. This is what I have endeavoured to do, but not always with success; for in hunting a name up the stream of language we are sometimes checked before we reach the source, and from our deficient information are unable to follow the scent with any confidence beyond a certain point. But even when this happens, and we fail to trace a name to its original starting point, it is still interesting to follow it as far back as

we can; and from thence to trace its passage into modern languages; in the hope that at some future time, with a more complete knowledge of the older languages, its origin may be discovered.

ORANGE.—The Scr.* name for the Orange was *Nágaranga*, from *Naga*, tree or plant, and *ranga*, colour, subsequently contracted into *Náranga*. That it had reference to the peculiar colour of the fruit is the more probable, because *Náranga* was also applied to the Carrot, the root of which is, as we say, of an orange colour. The contracted Scr. name, with only the termination changed, still survives in the existing languages of India, the fruit being called *Nárangí* in both Hin. and Guz. In passing into Per. the name assumes three forms, *Nárank*, *Náranj*, and *Taranj*; the first represented by the Hung. *Narancs*; the second passing unchanged into Ar.; while the third is in Turk. applied particularly to the bitter orange.

The original initial N. is retained in only some of the languages of S. Europe, as in the modern Gr. *νεραντζι*, the Venetian *Naranzi*, and the Sp. *Naranja*. From the latter comes the Prt. *Laranja*, which when adopted into Bask is further changed into *Laranya*. Except in the Venetian

* The following abbreviations are made use of for languages :—

Scr.	Sanscrit.	A. S.	Anglo-Saxon.
Hin.	Hindustanee.	Eng.	English.
Bng.	Bengalee.	Dan.	Danish.
Guz.	Guzeratee.	Sw.	Swedish.
Tam.	Tamul.	Ice.	Icelandic.
Tel.	Telugu.	Bret.	Breton.
Mal.	Malayalam.	Wel.	Welsh.
Per.	Persian.	Corn.	Cornish.
Gr.	Greek.	Ir.	Irish.
Lat.	Latin.	Gael.	Gaelic.
It.	Italian.	Mx.	Manx.
Sp.	Spanish.	Rus.	Russian.
Prt.	Portuguese.	Pol.	Polish.
Fr.	French.	Boh.	Bohemian.
O.H.G.	Old High German.	Hung.	Hungarian.
Ger.	German.	Ar.	Arabic.
L. G.	Low German.	Heb.	Hebrew.
Dut.	Dutch.	Turk.	Turkish.

dialect the Italians drop the first letter altogether, and say *Arancia*, which was latinized in mediæval times into *Arancium*, and *Aurantium*, the change of the opening syllable to *Aur* having reference to *Aurum*, gold, in allusion to the golden colour of the fruit. Under the same influence the French have *Orange;* and this modification passed into English. It is recorded in Queen Eleanor's household expense book that in A.D. 1290 she purchased from a Spanish ship that arrived at Portsmouth "vii poma de *orenge*"; but the earliest occurrence of the name as an English word that I have met with is in an alliterative poem of about A.D. 1360, on the destruction of Sodom, in which the trees growing by the Dead Sea are described as bearing fruit as fair "as *Orenge* "and other fryt and Apple garnade; al so red and so ripe and "rychely hwed." Shortly after this date we read of "*Orengis* "and Apples of grete aprice." Our name is thus derived immediately from the French; but the supplies of the fruit itself in early times reached England at any rate in part from Spain; for Shakespeare writes "as civil as an orange," an evident pun upon the "Seville" or bitter orange. The Fr. name has also been adopted into modern German, and other Teutonic as well as some Celtic languages, appearing in its most corrupted form in the Wel. *Oraits* and Ir. *Oraisde*. A former German name was *Pomeranke*, now surviving as *Pomeranze;* and we find in several other languages this prefix *Pome*, in its general sense of round fruit, as used by ourselves in *Pomegranate*. The Swedes and Danes call the fruit *Pomerans*, and among Slavonic languages are found the Rus. *Pomeraitse*, Boh. *Pomoranc*, and Pol. *Pomarancza*.

My reason for taking the Orange first is partly in order to consider at the outset those names that can be traced back to Scr., and partly because the variations of this name in the different European languages afford a good example of the great and irregular changes that can take place in a name

when it passes by lateral transmission from one language to another. *Laranya, Oraisde,* and *Pomarancza* are very unlike to each other, and to the Scr. *Nágaranga;* and yet there can be no doubt that they are all corruptions and modifications of that original name.

Lemon. In Lemon, on the contrary, we have an original Scr. name, varying a good deal in its early stages; but afterwards spreading with remarkable uniformity throughout the European languages. Several of the Scr. names for fruits refer to their succulence, or signify that they are eatable: and from the root "*jam,*" to eat, are formed the names applied in common to both the Sweet Lime and the Lemon, *Jambíra* and *Jambú.* The latter was modified in Scr. itself to *Nimbú,* which is still represented by the Ben. *Níbú,* and Hin. *Nímú;* but in the modern languages of India the initial N is often changed to L (as in the Port. for Orange), and we have in Guz. *Límbú,* and in Hin. *Líbú* and *Límú.* It is since this change of N into L that the name has passed into Per., where we find it written both *Límú* and *Límún.* The latter appears unchanged in Turk. and Ar.; and with very slight changes in most European languages, the principal variations being *Limon, Limone, Limoen, Lemão,* λεμονι, and *Lemon.* The most corrupt forms are again the Celtic, the Ir. *Liomoid,* and Gael. *Liomaid..* The French originally used *Limon,* which still survives in their *Limonade*; but to the fruit itself they now apply the name *Citron:* and we have in this an instance of the arbitrary transfer of a name from one fruit to another, which, although belonging to the same genus botanically, is yet quite distinct. Such a transfer is not uncommon, and has sometimes given rise to great confusion, as we shall find when we come to the Cucurbitaceæ.

Pomegranate. One of the Scr. names for this fruit, *Dálima,* is said to be from *dal,* to burst; but it was likewise

written *Dádima* and *Darimba*. The direct descendants of these names appear in the Hin. *Darim*, and the Ben. *Dálim ;* and they have even become naturalized, in a somewhat altered form, in Turanian languages of India, as in the Tam. *Ma-dálam*, Mal. *Ma-dála*, and Tel. *Dádima ;* but they have not spread Westward. Another Scr. name for the Pomegranate is *Nírasa*, from *Nira*, water or juice, probably in allusion to a drink which was prepared from the fruit. We read in Canticles (VIII, 2) of "spiced wine of the "juice of my Pomegranate." Dioscorides also writes of pomegranate wine ; and a sherbet is still made from the fruit in Persia. From *Nírasa* comes the Hin. and Per. *Ánár*, modified in the latter language to *Nár*, in which form it has passed into Turk. Another Per. name for the Pomegranate is *Rána*, considered by Vuller to be a corruption of the Gr. ῥοια or ῥοα ; but it is probable that both are derived from the name of the fruit amongst the neighbouring Semitic nations. The Per. would then be only a contraction of the Ar. *Rommána*, or the Chaldee *Rimmona*. The Hebr. modification *Rimmon* is familiar to English ears as the name also of the Syrian deity, in whose temple Naaman requested permission to bow down : and it has been suggested that the Syrian religion was a relic of the ancient tree worship ; and that the Pomegranate-tree was worshipped as an emblem of the fertilizing principle in nature. The Ar. name was carried by the Moors into the Peninsula, where it still survives in the Portuguese *Romãa*. We shall find other plants retaining in that language their Moorish names, which thus constitute a memorial of former Mahomedan supremacy.

The Pomegranate seems to have been introduced to Rome from Carthage, hence one of the Lat. names for it, "*Malum "punicum*," or Punic apple : but although the Romans may have thus received the fruit from a Semitic source, they did not adopt the Phœnicean name. The other Lat. name,

Granatus, was descriptive of the internal structure of the fruit, and has since spread over most of Europe, often joined to the name for apple—*Granata, Granada,* and *Grenade; Pome-granate, Mela-granata,* and *Ma-grana; Granat-apfel* and *Granat-alma,* are all plain adaptations of the name; while the Rus. *Graiatovoe-iablok,* Boh. *Gablko-zrnate,* and Wel. *Afal-gronynog* are literal translations of a "grainy apple." So also was the A.S. *Æpl-cyrnlu;* for, as the Pomegranate is mentioned in Scripture, its name has travelled with Christianity, and reached England at an early date. The old French name, up to even Gerarde's time, was *Pomme-granate;* and after the Conquest this passed into English, both as *Apple-garnade,* see the passage quoted under Orange, and as *Pome-granate,* the latter appearing in a vocabulary of the 15th century in the very corrupt form of *Pounkaret.*

Raisin, Grape, Vine.—Several names are assigned to the Grape in Scr. dictionaries; but of these the only one that has come down to the present time is *Rasa,* which means also juice, and is derived from the root *Ras,* to taste. In Per. the name exists as *Ras* applied to the vine, and *Rasá* to its fruit; while the Gr. form was ῥαξ; and the Lat. *Racemus,* signifying rather a bunch of grapes than a single fruit; which meaning is retained by the It. *Racemo,* and Sp. *Racimo.* The transition from the Lat. to the Fr. *Raisin* is well shown by the intermediate Provençal names *Razim* and *Razain.* Again from the Fr. the name has been adopted into Bret. as *Rezin,* and into Ir. as *Risin,* in the sense of the fresh fruit; and it seems formerly to have been occasionally used in this sense even in English, for Chaucer writes:—

> "For no man at the first stroke
> Ne may not fell downe an oke,
> Nor of the reisins have the wine
> Till grapes be ripe and well afine."

It is, however, now applied only to the dried fruit; as also are the other modifications, the Ger. *Rosine,* Dut. *Rosijn,* Dan.

Rosin, Swed. *Russin*, Wel. *Rhesin*, Pol. *Rozynek*, and Boh. *Hrozinka*.

In It., Sp., and Port., the name for grape, *Uva*, is identical with an original Lat. name, which, like the Scr., is indicative of the juicy or watery nature of the fruit: "Uva sic dicitur "ab uvore, ut scribit Varro." Our own name *Grape* displaced the A. S. *Win-berig* after the Conquest; and its etymology is as follows:—It. *Grappo*, a siezing; *Grappare, graspare*, to seize; *Grappa*, the stalk of fruit, the part that is held; *Grappo, grappolo*, a bunch of grapes. The Fr. *Grappe* also means a bunch; but the Dut. *Grappe* or *Krappe* is applied like our own name to a single fruit.

Turning from the fruit to the plant itself, the Lat. *Vitis* is cognate to our own *Withy:* indeed in Ice. the vine is called *Vin-vithi*. Both derive their name from their flexibility from a root *Vi* or *Wi*, in Scr. *Ve*, to weave or plait, which occurs also in the Lat. *Viere* and *Vimen*. The lineal descendants of the Lat. *Vitis* are the It. *Vite*, Sp. *Vid*, and Port. *Vide*. The English word *Vine* bears some outward resemblance to these, but it is of entirely different derivation, coming from the Lat. *Vinum*, wine; and to trace its remote origin we must enquire into that of wine.

It is easy to connect *wine* with the Lat. *Vinum*, and the Gr. οἶνος, which originally had the digamma Foινος; but it is not easy to discover the previous pedigree of these classical names. I do not find any words related to them in Scr., though they may possibly be connected with the Per. *Wín*, a black grape. At the time when Hebr. was erroneously believed to be the parent of all languages, οἶνος was supposed to be from the Hebr. *íín*, wine; which in its turn comes from *íne*, to squeeze or press. Now that the Arian and Semitic families of languages have been properly distinguished from each other, a Heb. derivation of Greek and Latin words has to be generally abandoned; but in the present case it may

be a correct one. That Semitic words are sometimes adopted into Arian languages, and vice versa, cannot be denied; and such adoption is more likely to happen when a Semitic and an Arian nation come into contact, and the thing the word represents passes from one to the other. Numerous instances might be given; but it may suffice to refer to the Almug trees, ivory, apes, and peacocks, which Solomon's ships brought from Ophir, and which, Professor Max Müller has pointed out, retained Arian names in Hebr.; to the camel, which is known everywhere by its Semitic name; and to the hosts of words common to Ar. and Per., evidently introduced from one to the other since the two peoples have been brought together by their Mahomedanism. If therefore the intoxicating drinks of the early Arians were prepared from honey, milk, or grain, and the art of fermenting grape-juice was afterwards acquired from their Semitic neighbours, the Semitic name may readily have been applied to the grape-wine in Arian tongues, Be this as it may, and whatever be its origin, the Lat. *Vinum* has since spread over Europe, with comparatively little variation; and has given its name not only to wine, but often to the fruit, and to the plant on which it grows,—the latter being generally termed Wine-tree, and the former Wine-berry.

In addition to the names derived from *Vinum* there are many others scattered amongst European languages applied to either the grape, or to the vine or some part of it. Several are quite independent, and therefore indicate that the vine, or at any rate some variety of it, is indigenous in S. Europe; and that it is not merely an introduction from Asia as some suppose. In Boh. the vine is termed *Rywa, Rewi,* or *Rew;* which in Ger. in found as *Rebe;* and in Swed. as *Ref,* a vine-tendril. The Ger. *Traube* means in a primary sense bunch, but more especially a bunch of grapes; which in the L. G. dialect of Bremen is *Druve,* in Dut. *Druif,* in Swed. *Drufwa,*

and in Dan. *Drue* or *Vin-drue*. *Loza*, another Boh. name for the Vine, is independent, as also the Hung. *Szölö*. Finally the Bask names are entirely unlike any others, *Mats* or *Mahats* meaning grape; and *Matsti* or *Mahastia*, a vine.

Palm, Date.—In Scr. the Date had three names, all indicating hardness. Of these *Kharjúra*, from *Khara*, hard, survives in the Ben. and Guz. *Khajúr;* but in the other existing dialects of India the names are quite distinct—in Hind. *Seindí*, in Tel. *Ita*, and in Tam. *Ilcham pané*—so that the tree is evidently native in the Peninsula, and the Arian invaders would find it there after they crossed the Himalayas. The Per. name, *Kharma*, though not unlike the Scr., is probably from *Kharm*, good, and has passed into Turk. The Gr. name of the Palm, φοινιξ, merely indicates an introduction from Phœnicia: and is the origin of the Rus. *Phínike*. The Lat. *Palma* means literally the palm of the hand; and several explanations have been given of its application to the tree. Some think that it was from the crown of leaves, radiating from the stem as fingers do from the hand; others that it is descriptive of the hand-like bunch of fruit; a supposition supported by the name of the fruit, *Dactylus*, which means a finger; though, strangely enough, not the Lat. *digitus*, but the Gr. δακτυλος has been used. Dr. Prior considers that the name originated from the palmate leaf of the dwarf-palm of S. Europe, and has since been extended to other palms; but although *Chamœrops humilis* and the Date-palm are botanically related, they are hardly sufficiently alike in appearance to be connected with each other in popular phraseology. Whatever caused the names for the palm and fingers of the hand to be applied to the tree and its fruit, these Lat. names are the parents of those now existing in European languages. The name of the tree hardly varies at all; that of the fruit but little, the main modifications being *Daktil*, *Datil*, *Dattoli*, *Dattero*, *Dattel*, *Dadel*. Our present English *Date* comes

from the Fr. *Datte*, formerly written *Dactil* and *Dacte*. The A. Saxons had adopted only the name of the tree; and formed from it one for the fruit, *Palm-æppel:* on the other hand, in several languages, from the name of the fruit has been constructed one applied specifically to the tree, to distinguish it from other palms, as the Sp. *Dattilero*, Fr. *Dattier*, Swed. *Dadlar*, and Port. *Tamarera*. The last is from the Moorish *Tamra*, a date, still surviving in Port., and corresponding to the Hebr. *Támár*, a palm, which means literally straight or upright, in allusion to the stem.

Olive. Palestine was pre-eminently "a land of oil olive "and honey," and it is therefore but natural that the Hebr. name *Zait*, applied alike to the olive and its oil, and believed to be derived from *Zahit*, to shine, should pass into neighbouring languages. The Arabs call the olive *Zeitún*, the cultivated olive-tree *Zeitúna;* whence, through the Moors, the Sp. *Aceyte*, oil, *Aceytuno*, the cultivated olive-tree; and the corresponding Port. *Azeite* and *Azeitona*. The Ar. *Zeitún* has also passed into Turk., and thus established itself in the East as well as in the West of Europe. The Per. name for both olive and oil, *Zeit*, is undoubtedly of Semitic origin, for it agrees exactly with the Heb.; and I cannot but regard the Scr. name attributed to the olive, *Jíta-phal* (*phal*-fruit) as merely a corruption of the Per., and of comparatively late origin, for in the Indian dialects the Per. Z is generally turned into J.

The Scr. name for oil, *tel* or *tail*, is however original, and, with the initial *t* dropped, is probably the source of the Gr. ἐλ-αιον, and of the Lat. *ol-eum*. The Lat. word has passed into all European languages, and has given the names, not only to the manufactured product, but also to the tree and its fruit, with variations so slight that it is unnecessary to particularize them. The A. Saxons had *Ele*, oil, *Ele-beam*, i.e. oil-tree, and *Ele-berge*, oil-berry. Our present English form

of the word, *oil*, is probably from the Fr. *huille*, through the Norman *oille*; and our *olive* is the Fr. word unchanged.

Fig. The Scr. name attributed to the fig, *Anjíra*, appears, like that of the olive, not to be original, but is considered by Prof. Monier Williams to be from the Per. *Anjír* means in Per. primarily foramen, and it is applied to the fig probably in reference to the opening at the lower end of the fruit. It has passed unchanged into the dialects of N. India; and appears as *Injír* in Turk. The Hebr. name *Tínah*, in Ar. written *Tín*, is original, and said to be from *Tán*, to spread out, in allusion to the spreading growth of the branches. The Gr. συκον seems also to be an original name, though I cannot discover its significance; and from it we have the Lat. *Ficus*, the change of s. into f. being agreeable to analogy. The modern languages of Europe all derive their names from the Lat., the c. or k. sound being often changed to the corresponding soft check g. The most aberrant are the Sp. *Higo*, Ger. *Feige*, Bret. *Fiez*, and Wel. *Ffigys*. Even the Bask has not an independent name, *Pikôa* being evidently only a corruption of *Fico*. We have therefore no etymological evidence that this fruit is indigenous in Europe W. of Greece; and it probably had its origin in the district included in Boissier's Flora Orientalis.

Melon, Pumpkin, Cucumber, and allied fruits. Much confusion has been caused by the name of one species of Cucurbitaceæ, when transferred to another language, having been erroneously applied to other species, so that it is impossible to trace out fully the name of one of the group, without considering along with it the names of the others; but although the etymology is thus intricately involved, I will endeavour to unravel it as well as I can.

One of the Scr. names of the Cucumber, *Sukásа*, comes from the roots *Su*, good (whence *Sukh*, pleasure, joy), and *Khád*, to eat, and thus signifies that the fruit is good or

pleasant to eat. It is represented in India by the Ben. *Susha;* and in Per. by *Fikús,* the change of s. into f. being analogous to that from the Gr. συκον to the Lat. *Ficus.* In Gr. it existed in two forms (1) σικυα, used for cucurbitaceous fruits generally; (2) σικυς or σικυος, applied to one eaten unripe, probably the cucumber. The former name, after being thus used as a generic term, appears in It. as *Zucca,* again applied specifically, but now to different species, viz., the gourd and pumpkin. In the other languages of Europe we find no trace of σικυος; unless we can regard as a corruption of it our English *Squash,* a name now surviving in America rather than in Britain, but formerly applied to what of late has been termed "Vegetable marrow." I make this suggestion, however, with considerable hesitation, for "Squash" was also used in the sense of something immature, and Shakespeare more particularly applies it to an immature peas-cod. Thus when Bottom is introduced to Titania's attendant fairy, Peas-blossom, he says to her:—"I pray you commend me to "Mistress Squash your mother, and to Master Peascod your "father;" and Malvolio describes Viola as "not yet old "enough for a man, nor young enough for a boy, as a squash "is before 'tis a peascod, or a codling when 'tis almost an "apple."

In contradistinction to σικυος, which was eaten unripe, the Greeks called fruits of a somewhat similar kind, but which were eaten ripe, πεπων. The word is properly an adjective, and means ripe; coming itself from πεπτω, I cook,—a ripe fruit being regarded as baked by the sun. The name passed into Lat. as *Pepo (peponis),* and has thence passed into modern languages. The It. *Popone* is applied to the Melon; the Sp. *Pepin,* and Port. *Pepino* to the Cucumber; but in other languages the name refers chiefly to the Pumpkin. Our own word was originally written *Pompion* or *Pumpion,* and agrees with the Fr. *Pompon,* in Languedoc *Poupoun,* with

the Dut. *Pompoen*, Swed. *Pumpa*, and Wel. *Pwmpa* or *Pwmpion*. The Gr. *Pfebe* is also related. The ancient Greeks appear to have included under πεπων both the pumpkin and the melon; at least so far as the fruits can be identified from their descriptions, some authors apply the name to the one, some to the other. In modern Greek it is retained for the melon. When, however, this fruit was introduced to Rome it was at first termed for distinction *Melo-pepo*, the Gr. word μηλον, meaning primarily apple, but used also generically for round fruit, being attached to πεπων in allusion to the shape of the fruit. Μηλον itself appears to me to belong to that class of words,—originally from the root *mar* or *mal*,—that signify softness, such as the Lat. *molle*, the Slavonic *maldu*, and our own *mellow*,* and it was probably exactly in the sense conveyed by the last word that μηλον was applied to the apple. In course of time the Romans shortened *Melo-pepo* into *Melo* (*melonis*), so that the Gr. word for apple became the Lat. word for melon, and in that sense it has passed into the Romance, Teutonic, and some of the Slavonic languages, varying in form to *Melone*, *Melon*, *Melaõ*, *Meloen*, and *Melaun*. The Wel. also have *Melon*, but in Ir. and Gael. it is more corrupted, and occurs as *Meal-bucan*.

The Portuguese, besides using *Melaõ* for the melon, apply the name in the modified form *Melancia*, also written *Balancia*, to the fruit which we call *Water-melon*. Our name is equivalent to the Ger. *Wasser-melon*, Swed. *Watten-melon*, and Dan. *Vand-melon*; but it is not of long standing, and I incline to think that this fruit was formerly included under the term "pumpion," and that allusion is made to it by the Merry Wives of Windsor when, in their indignation, they speak of Falstaff as "this unwholesome humidity, this "gross watery pumpion."

Returning to Scr., we find another name for the Cucumber,

* See below under Mulberry.

or perhaps the closely allied species, Cucumis utilissimus, viz., *Karkati*. At first sight this might seem to come from *Karka*, white or good; but I believe it is rather connected with the reduplicated form of the Per. *Khar* or *Khíar* treated of below, in which case it would be from the same root *Khád*, to eat, that enters into the composition of *Su-khása*, and express the same idea as that word. In India it is now applied to the Cucumis utilissimus, called by Anglo-Indians the "Field Cucumber," and occurs as *Karkti* in Beng., *Kákdí* in Guz., and *Kákrí* in Hind. In Europe it is applied to the Cucumber, being identifiable with the Boh. *Okurka* or *Ogurka*, the Rus. *Ogúrege*, and the Pol. *Ogórek*, more corrupt forms being the Hung. *Uborka*, and Esthonian *Ukkuritz*. In Ger. it appears as *Gurke*, in Dan. *Agurk* or *Grœskar*, and in Swed. as *Gurkor*. Our own *Gherkin*, a diminutive formed from the Ger. or Scandinavian, means more particularly the small kind of Cucumber used for pickles.

From two Zend words, or perhaps they may more properly be called modifications of one word, which signifies to eat, *Cash* and *Car*, is, I believe, derived the series of names, slightly varying in form, which are assigned in Per. to different species of Cucurbitaceæ; and which thus possess the same original meaning as the Scr. names. From *Cash* comes the Per. *Kashank*, a gourd, corresponding with which we find in Scr. *Kúsh-manda*. I also incline to the belief that the Hebr. *Keshua*, which in our Bibles is translated Cucumber, is a form of this Arian name, adopted into Hebrew, just as *Kara'* and *Khiár* have been into Ar. This last, *Khiár*, is only one of the several Per. names formed from the Zend *Car*, and is specific for Cucumber. It has passed into Turk. as well as Ar., and occurs in Hind. as *Kíra*. The Per. *Kara'*, from the same root, means the gourd, and is also written *Kadú*, which modification has passed into Beng., and is related to the Scr.

Katú-tumbí. Another form, *Khar,* is generic, and enters into the composition of several Per. names, with various qualifying additions, such as *Khar-zahra,* the Colocynth ; *Khar-búzah* or *Khar-baz,* referred to below ; and, when combined with the specific form *Khiár, Khar-khiár,* a Cucumber. It is this double form of the name that I believe is connected with the Scr. *Karkatí ;* and with the Lat. *Cucur-bita,* gourd, and *Cucu-mis,* Cucumber.

Each of these Lat. names has left descendants, meaning generally the same fruits, amongst modern languages. From the former comes the It. *Cucuzza,* and the Fr. *Cougourde,* afterwards shortened into *Gouhourde* and *Gourde,* whence our our own *Gourd,* and the Dut. *Kauwoerde.* From *Cu-curbita,* dropping the first syllable, I believe also comes the Ger. *Kurbiss,* the Pol. *Korb, Korbel,* or *Korbas,* and lastly the Sp. *Calabaza,* which has become naturalised in the W. Indies, and is the origin of the Dut. *Kalabas,* and our own *Calabash.* Gourd and Calabash, therefore, though so unlike, are related, the one having come by a French, the other by a Spanish line of descent. From the Lat. *Cucumis (cucumeris)* it is easy to trace the It. *Cocomero,* which however is misapplied to the Water-melon, the Sp. *Cogombro,* Fr. *Concombre,* whence our own *Cucumber,* also the Dut. *Komkommer* and Ger. *Kukummer.*

Reverting to the compound words formed from the Per. *Khar,* we find one in which it enters into combination with *búzah,* heavy. *Khar-búzah,* or, as it is also written *Kharbaz* and *Kharpaza,* refers to the larger fruits of the group, and is applied, apparently indiscriminately, to the Melon, Water-melon, and Pumpkin. In the Indian dialects we find it as *Khar-búja,* Hind. and Beng. for Melon. *Turmúj,* Beng. for Water-melon, is probably a modification ; as also the Tel. name of the same fruit, *Darbúji.* Vuller connects the Ger. *Kurbiss,* gourd, with *Khar-búzah ;* and if this name is de-

rived from it, so will also be *Calabash*, and the other names mentioned in connection therewith. Otherwise in passing Westward the Per. names seem to be restricted to the Watermelon. The names of that fruit in Turk., *Qarpuz*, and in modern Gr., καρπουζι, preserve the initial K, but it is dropped in passing into Rus. *Arbus* and *Ardouse*, Pol. *Arbuz*, Ger. *Arbuse*, and Fr. *Arbouse*.

Almond. The Scr. term for the Almond, *Párasíka-janair* or Persian-born, sufficiently expresses its origin. According to Prof. De Candolle, quoting Ainslie's "Materia Medica," the Almond is known in Persia itself as *Badaní-farsí*, the qualifying "*farsí*" meaning "Persian;" but elsewhere the Per. name is given as simply *Badám*, which appears in Turk. as *Badim*. The Gr. ἀμυγδάλη is evidently an original name, the meaning of which I do not find explained, but I would hazard the conjecture that it refers to the place from which the fruit was introduced to Greece, just as κυδωνεα expresses the introduction of the Quince from Cydon, and κερασος that of the Cherry from the city of that name in Pontus. The place from which the Almond derived its name may have been the Egyptian Magdala, the *a* being a prosthetic vowel.* From the Gr. the name was adopted into Lat. as *Amygdalus;* and from this again the European names are all descended. In most cases the *g*, coming before a *d*, is turned into *n*, the principal exceptions being the Wallachian *Migdale* and Pol. *Migdel*. In the former language, however, the name is also written *Mandale*, corresponding with the It. *Mandola* and *Mandorla*, whence it passes into Ger. Dan. and Swed, as *Mandel*, into Boh. as *Mandle*, Rus. as *Mendalina*, and Hung. as *Mandola*. In Dut. the name is *Amandel;* and in other languages also the initial *A* has been retained, as in the Sp. *Almendra*, Port. *Amendoa*, Provence *Amandola*, and Fr.

* "Prosthetic vowels are very common in Greek before certain double consonants, and before *r*, *l*, *n*, *m*."—Max Müller, *Science of Language*.

Amande. This last was formerly written *Almande,* and thence our own *Almond;* for although in an A. S. Vocabulary of the 10th century the name is given "*Magdala,*" this does not appear to have been a popular name: at any rate, like some other A. S. names derived direct from Lat., it was superseded after the Conquest by the French form. The Celtic names—Bret. *Alamandez,* Wel. *Almon,* Ir. *Almoin,* and Gael. *Cnu-almoine* (*Cnu*-nut)—are mere modifications of the Fr. and Eng.; the Welsh, however, have as well a name of their own, viz., *Cneuen groeg,* or Greek nut.

Peach. Closely allied to the Almond, the Peach is, like it, apparently of Persian origin; so, at least, the etymology of the name indicates. In Per. itself the fruit is known as *Shaft-álú,* or coarse-plum, the distinctive feature relied on being the texture of its skin, to which the Welsh also allude, when they call it *Eirin-gwlanog,* literally Woolly-plum. This Persian name appears in the dialect of the Caucasus as *Scheptaly,* and in Turk. as *Sheftaly.* Another Per. name is *Fársak,* evidently based upon their own national name. The Arabs also call a variety (the Nectarine) *Tufá'a farsi,* or Persian-apple, expressing thus the same meaning as the Gr. μηλον-περσικον,* whence the Lat. *Malum-persicum,* or more shortly *Persica.* This last still survives in It., both unaltered and further shortened into *Pesca:* in Fr. it was formerly written *Pesche,* but now *Pêche;* whence our Eng. word, which was formerly spelt both *Pesche* and *Peche.* The Fr. name is also the origin of the Bret. *Pechez:* in the other Celtic languages the Welsh call the fruit *Afal-peatus* (*Afal* = apple); and the Irish the tree *Cran-peite* (*Cran* = tree). The A. S. vocabulary, above alluded to, gives *Persoc,* which is perhaps the origin of the old Eng. forms of the name, *Peske* and *Peesk,* which correspond to the L. G. *Päske.* The Ger.

* The modern Gr. name is ῥοδάκινον, alluding to the red or rosy colour of the fruit.

Pfirsche, Dut. *Perzik*, Dan. *Ferseken*, and Swed. *Persika* are all evident modifications of the Lat.; so also are the Rus. *Persike* and the Illyrian *Pruska*. In the latter language it is also written *Breskwa;* and this leads us to the name in other Slavonic languages, in which the labial *p* is changed to the corresponding soft check *b*; viz.:—Boh. *Broskew* or *Breskowy* and Pol. *Broskwinia*. The Hung. *Barack* comprehends both the Peach and the Apricot, the former being termed *Oszi-barack* (*Oszi* = autumn) in contradistinction to the latter, *Kajszi-barack* (*Kajszi* = spring): the name will be treated of under Apricot. I have left to the last the names current in the Iberian peninsula, as they have a double origin. The old Span. *Pexego*, and Port. *Pesego*, are evidently from *Persica*, as also the Bask *Peska* and even *Mertchika* and *Muchika*, for a Span. *p* is not unfrequently changed to *m* when it passes into Bask. The name now more common in Span., *Durazno*, is, however, different. It is from the Lat. *Duracina*, a name applied by the Romans to a variety of the Peach, (the Nectarine?) and evidently derived from the Syrian *Dorraq*, which is found in Ar. as *Durâkah*. The Span. name might indeed be regarded as from the Ar., were it not that the final syllable "*no*" points rather to the Lat. form.

Apricot. The early names of the Apricot, like those of the Peach, indicate an origin in Western Asia; for the fruit has in Per. an original name, *Zard-álú*, or Yellow-plum, slightly changed in Turk. to *Zerd-álú;* and the name given it by the Greeks, μηλον ἀρμενιακον or Armenian apple, shows that it reached them from the Eastward. The same name is found in Lat. *Malum armeniacum;* and is the origin of some of the more modern names of the fruit, as the It. *Armeniache*, *Moniache*, and *Armellini;* the Fr. *Armègne* and *Carmaignole;* the Ger. *Armenellen* and *Marillen;* from the last of which doubtless comes the Pol. *Morela;* and possibly even the Boh. *Merunka*.

This fruit had in Lat. also another name, *Prœcocia*, given to it because it flowers earlier than the Peach and other stone fruit; and expressing the same idea as a Fr. name recorded by Cotgrave, *Avant-perse*. This *Prœcocia* is the predecessor of many modern names. It had passed into Greek by the time of Dioscorides and Galen, who wrote the name πραικοκκια and βερικοκκια; and it is still found in the modern language as βρεκοκκια and πρικοκκια. In the Sardinian dialect it survives as *Piricocca*, and in the Venetian as *Baricoccolo;* but elsewhere in Italy it is called *Al-biricocca* and *Albicocca*. A very ingenious theory has been suggested to account for this prefix, which is found in other languages besides It. The Lat. *Prœcocia* is first identified with the Ar. *Barkúk;* and is then supposed to have migrated into Span., along with the article "*Al*," *Al-barkúk* becoming *Albaricoque;* and subsequently to have passed not only back into Italy, but also into French and other languages. This explanation is, however, far from satisfactory in some respects; for, as De Candolle has pointed out, on the authority of Forskahl and Delile, *Barkúk* is the Ar. name not for the Apricot, but for the Plum; and it seems to me much more likely that the prefix has arisen simply from the difficulty, which the barbarians, who overran the Roman empire, appear to have experienced in pronouncing Lat. words beginning with a double consonant, especially if the first letter of the two was an *s*, or the second one an *r*. To give only a few instances, we have the Span. *Espino* and Fr. *Epine* from *Spina;* the Sp. *Espirito* and Fr. *Esprit* from *Spiritus;* the Fr. *Epreuve* from *Probare;* and *Ecrevisse* from O. H. G. *Krebiz;* we shall shortly see that the Lat. *Prunus* becomes in Port. *Abrunho;* and even in Old English we find such words as "aprice" for "price,"* and "abroach" for "broach." The difficulty of pronouncing the double consonant may be avoided either by inserting a vowel between

* See the quotation under Orange.

them, as in the Sardinian and Venetian names for the Apricot; or by placing a vowel before them, which has been preferred in other instances. The French have *Abricot*, whence our own *Apricot;* though formerly we followed the Lat. in the terminal consonant sound, and said either *Abrecocke* or *Apricock*, as the name is given by Gerard and Shakespeare respectively. The Dut. *Aprikoos*, Ger. *Aprikose*, Swed. and Dan. *Aprikos*, and Rus. *Aprikoce*, are but slight variations; as also the Bask *Abrikota*. The Bretons drop the *a* and say *Brikez;* and the Hungarians have the name as *Barack*. They make the name generic, however, and include under it, as has already been stated, the Peach, which is distinguished as the Autumn species; while the Apricot is, in contrast, and with reference to its early flowering, called *Kajszi-barack* (*Kajszi* = spring), or, in allusion to its colour, *Sarga-barack* (*Sarga* = yellow). The former of these qualifying terms, *Kajszi*, seems to have passed, as a distinct name, into Turk. as *Qaysi*, and into modern Gr. as καΐσι.

In Span. this fruit has a second name *Damasco*, which it also bears in Port., apparently misapplied to it, and originally meaning the Damson; just as in the same languages *Pepino* has been transferred from the pumpkin to the cucumber. Vice versâ from the Ar. name of the Apricot, *Mesh* or *Mesh-mesh*, has been formed *Ameixa*, the Port. name for Plum.

Plum, Bullace, Sloe, Damson. The plum would appear to be indigenous over a much wider area than the two preceding fruits; for its uncultivated varieties have original names in many more languages. Its Pers. name *álú* is rather generic, being applied to both the peach and apricot, with qualifying adjuncts; and even varieties of the Plum itself are particularly termed *Álú-y-sayáh* (Black-plum) or *Álú-y-bakárá* (Bokhara plum), the latter indicating its being native as far East as Central Asia. *Álú* appears to have reference to the colour of some kinds of plum, and to be from *állú*, fire,

whence *áll*, dark-red. This etymology might be regarded as far-fetched, were it not that the same relation between words indicating fire, and the name for plum, is found both in Gr. and Lat., as will be seen by comparing προυνη, a plum-tree, with πυρινος fiery : and *Prunus*, with *pruna*, a live coal. From the Lat. name come the It. *Prugno*, and Fr. *Prune*, the latter being adopted into English for the dried fruit, as "Raisin" is for the dried grape. In Bret. the name is *Prun :* in other languages the *n* is changed to *m*, as in the S. Ger. *Prume*, L. G. *Pfraume*, and Dut. *Pruim*. The Portuguese apply the name only to the wild tree, as *Abrunho ;* but the Italians and French, when they use it for the wild tree, change it into a diminutive form *Prugnola* and *Prunelle*, the wild fruit being considerably smaller than the cultivated. In other languages, by the well-known change of *r* into *l*, the name wears a somewhat different aspect, as in the Lettonian *Pluhme*, Ger. *Pfaulme ;* L. G. *Plumm*, corresponding to the A. S. *Plume*, and our present *Plum ;* the Ice. *Plóma*, Dan. *Blomm*, and Swed. *Plomon*. It has passed even to Celtic languages, as the Corn. *Pluman*, Ir. *Pluma*, and Gael. *Plumbas*.

The Slavonic languages have an entirely different name for the plum, the original signification of which is unknown to me, viz., *Sliva*, found in Rus., Pol., and Boh., and passing into Hung. as *Szilva*. I believe that from this Slavonic form comes the name of the wild variety (Prunus spinosa) in Fr. *Sillon*, and in the various Teutonic languages. Our own *Sloe* is from the A. S. *Sla*, the more ancient form being preserved in Northern dialects, in the Lancashire *Slaigh*, and Scotch *Slae*. The cognate names are the Old Ger. *Schlehe*, Dut. and L. G. *Slee*, Dan. *Slaae*, and Swed. *Sla*. I must mention however that Dr. Prior connects these Teutonic names with the verb "slay," to kill, which has a corresponding representative in each language ; although he is in doubt "whether "the connexion is due to the wood having been used as a

" flail (as from its being so used at this day is most probable) " or as a bludgeon."

To the spineless variety of the wild tree (Prunus insititia) is applied a series of names, represented in English by *Bullace.* This name occurs in English as far back as the thirteenth century, when it was spelt *Bolace:* and we read of " Bolaces and Blakeberries that on breres growen." Chaucer has it *Bolas,* and Gerard *Bulesse.* In old Fr. the fruit was called *Pelosse,* the tree *Bellocier;* and Professor De Candolle states that the name still exists in the Swiss dialect as *Belosse.* Dr. Prior connects Bullace with the Span. *bolas,* bullets, and Lat. *bullas,* bosses on bridles; and it is, no doubt, from the same root as these words and our own ball, bowl, &c., and has reference to the *round* shape of the fruit. Matzner suggests that, as applied to the fruit, it is of Celtic origin; and quotes in support a Wel. name *Bwlas,* and a Bret. *Bolos,* which latter De Candolle writes *Polos.*

The Celtic languages have an independent name for plum, the variations of which are the Bret. *Hirin,* Wel. *Eirin,* Manx *Arn,* Ir. *Airne,* and Gael. *Airneag.* It may possibly be connected with the Bask *Arana.* The Port. name, *Ameixa,* has already been alluded to, as being a misapplication of the Ar. *Mesh,* apricot. The Spaniards use for the cultivated plum, *Ciruela,* which appears quite independent.

The modern Gr. δαμάκηνον is an extension to plums generally of a name originally applied only to a particular variety, that which Pliny describes as *Damascena,* and tells us was so called from having been introduced from Damascus. It still bears a cognate name in most European languages. In Span. the original Lat. name still survives, *Damascena,* but it is also written *Amoscena:* the Italians also generally drop the *d,* and say *Amoscina;* but it is still retained in the Piedmont dialect, *Darmassin.* The Fr. has *Prune-de-damas,* Ger. *Pfaulm-damascenes;* whence our old English *Damask-*

plum and *Damassyn* (15th century), now contracted into *Damson.*

Cherry, Gean. The name of the cherry in the Cashmere dialect of Per., *álú-bálú*, or Plum's-cousin, marks correctly its affinity to the larger fruit. Probably this was at one time a more general name in Per., for it seems to survive at the other extremity of the district in which that language is spoken, in the *Bálí* of the Caucasus. Another Per. name *Kírás*, which is found unchanged in Turk., and as *Karas* in Ar., is evidently of the same origin as the Gr. κερασος, and the Lat. *Cerasus ;* and we have historic record that this last name was given to the fruit, or probably to a superior kind of it, from its having been introduced from κερασους or *Cerasus*, a town of Pontus. From the Lat. come most of the present European names for the cultivated fruit, as the Span. *Cereza*, Port. *Cereja*, and It. *Cirieggia* or *Cilieggia*. The Fr. *Cerise* is the immediate predecessor of our Eng. *Cherry :* the name was first introduced into English as *Cherise*, and it was so written up to even Chaucer's time ; but it gradually came to be regarded as a plural form, and the singular *Cherry* was formed for it ; just as *pea* was formed from the original *pease.* The A. S. *Ciris* or *Cyrs* corresponds to the Dut. and L. G. *Kerse*, and the Ger. *Kirsche.* The Scandinavian languages add to the name that for berry, and we thus have the Dan. *Kirse-bœr*, Swed. *Körs-bär*, and Ice. *Krisi-ber.* In Celtic tongues we find the Bret. *Kerez* or *Gerez*, N. Wel. *Ceiriosen*, S. Wel. *Sirian*, Gael. *Sirist*, and Ir. *Silin ;* all evidently corruptions from the Lat. ; as also the Hung. *Cseresnye*, and the various Bask forms *Khéreiza*, *Ghéréecia*, *Gerezi*, and *Ghezia.*

There is, however, another series of names in European languages, applied chiefly to the wild fruit, which can also be traced back to Per. In that language the sour or wild Cherry is called *Wishneh*, apparently from *Weshní*, red, in allusion

to the colour of the fruit; although the corresponding name in Ar., *Washna*, is now restricted to the black cherry. In Turk. the name is found almost unchanged, and it has passed into the Slavonic tongues, as the Boh. *Wisne*, Pol. *Wiṣn*, and Rus. *Wischenka*. In Mod. Gr. the initial letter is changed to *β*, in *βισινος*; and in Wallachian to *V*, as *Visini*. In Fr. by the common change of *W* into *gu*, it appears as *Guigne*, formerly written *Guisne*, and hence our Eng. *Gean*, the Span. *Guinder*, Port. *Guingeira*, and Bret. *Kignez*. Dr. Prior observes "The Dalmatians will have "Italianized *Wishna* into *Viscina* . . . but the Italians "will have regarded *Viscina* as a diminutive in '*ina*' from "*Viscia*, and have replaced it, from some motive of euphony, "by *Visciola*, its present name, as they have formed *bisciuola* "from *biscia*, and *pesciuola* from *pesce*, &c., and hence the "Ger. *Weichsel*, which will not only represent the same tree, "but the same word, as our *Gean*."

By the light of Etymology, therefore, we should be led to ascribe to the Cherry an origin in the same district as its relatives the Peach, Almond and Apricot. The wild Cherry is called in Italy *Amarasco*, from *amara* bitter; and dropping the *A.* becomes *Marasco*. In like manner, the Fr. *Merise* is formed from *amère*. Corresponding to this last, we have an English name *Merry*, now almost obsolete; but of the It. name our only representative is in the liqueur *Maraschino*.

Apple. The Scr. name for the Apple, *Sevi*, is in all probability not an original word in that language, but merely adopted from the Per. *Sîb* or *Síw*. In neither language do we find any name for the fruit that could be the ancestor of Apple; and yet, to ascertain the original meaning of our word, we must go back to Scr., in which *áp* signifies water, and *phal*, fruit, so that the name was given to the fruit because it was used in the preparation of a drink (cyder.) It thus corresponds exactly in *meaning* with the Lat. *Pomum*, which

is from πωμα, a drink; although in *form* there is no name in the classical languages that corresponds with "Apple" any more than in Per. or Scr. It runs, however, through all the Slavonic, Teutonic, and Celtic families of languages; and we must therefore conclude that it was adopted by the people speaking these languages, after they had separated from the Eastern and Southern divisions of the Arian race; but before they divided from each other, and while they still spoke a dialect of the original Arian, closely akin to Scr. The variations of the word are as follows:—Lithuanian *Obolys;* Lett. *Ahboli;* Ger. *Apfel;* L. G. and Dut. *Appel;* old Frisian *Apel;* modern *Aple* or *Æple;* A. S. *Æpl*, *Æppel*, *Apl*, or *Apul;* old Norse and Ice. *Eple*, *Epla*, and *Epli;* Dan. *Æble;* Swed. *Äple* and *Apel;* Bret. and Corn. *Aval;* Wel. *Afal;* Ir. *Uval* and *Uball;* Gael. *Ubhall;* Manx *Ooyl;* Dialect of Styria and Corinthia *Iablan;* Rus. and Pol. *Jablon;* Boh. *Gablon*. The name has been transmitted to some languages of different origin, as the Lapland *Äppel;* the Tartar *Apel* and *Alma;* from which last the Turk. *Elma*.

The Gr. name μηλον has already been noticed under Melon; in the Æolic and Doric dialects it was changed to μᾶλον, whence the Lat. *Malum*, used in rather a more specific sense than *Pomum*, which was applied to other round fruit like our own *Pome*. Both the Lat. names are represented in living Romance languages—*Pomum* by the It. *Pomo*, the Catalonian *Pomes*, and the Fr. *Pomme;* and although the name is not applied in Port. to the fruit itself, it is found in *Pomar*, an apple-orchard—*Malum* is found in the It. *Melo;* but I cannot connect it with the Port. *Macãa* and *Maceira*, Gallician *Moceira*, Castilian *Manzano*, and an old Fr. word, given by Gerard, *Mansana*. This series of names would rather appear to be independent, as is certainly the Bask *Sâgarra* or *Sagar*. The Ar. name *Tufâ'a* is believed to be connected with the Hebr. *Tapûcha*, which is accordingly translated in

our Bibles "apple." It is from a verb signifying to smell, and implies a fragrance belonging to the fruit, as noticed in Cant. vii, 8; and it is uncertain what fruit it really indicates, some authors supposing it to be the Citron, others the Quince.

The wild Apple has in some languages distinct names from the cultivated, as the Span. *Espériega*, the Fr. *Reinette*, and the Bret. *Grignon;* but in others it is merely called a "wild "apple," or wood- or forest-apple (malum sylvestre); and it is supposed that our term *Crab* or *Crab-apple* had originally this latter meaning, coming from the Gael. *Craobh*, a tree, a word connected with our Scrub and Shrub. Thus in the "Grete Herball" (A.D. 1526) the fruit is called a *Wood-crabbe;* and according to Turner (A.D. 1551) the tree is called "in the north countre a *Scarb-tree*," the present Scotch form of the name being *Scrab*. In some parts of England a Crab is termed a *Wharre;* and this name also is believed to be of Celtic origin, and to come from the Wel. *Chwerw*, bitter.

From the variety of names applied to it, the Apple would appear to be native over a wide district, extending from W. Asia to the shores of the Atlantic.

Quince. The variety of names which this fruit bears would indicate that it also is native over a wide range. In Per. it has several titles, of which one, *Safar-jal* has passed into Ar.; which however has also a vernacular name *Bedana*. The Greeks called the wild quince στρουθιον, probably from its affording food for sparrows, in contrast with the cultivated fruit, fit for the use of man; just as we call Prunus padus the *Bird* cherry; and the Germans the service berry *Spierling*. The cultivated fruit appears to have reached Greece from Crete, its name μηλον κυδωνιον, or simply κυδωνεα, being derived from the town of Cydon in that island. The Classical Lat. names were evidently adopted from the Greek, *Malum-*

cotoneum, *Cydonia*, and *Cotonea*; but at a later date, when the meaning of the name had passed from memory, it was sometimes changed to *Coctana*, in allusion to the fruit being eaten cooked rather than raw. These Lat. names survive in the It. *Mela-cotogna*, *Cotogna*, and *Codogno*, and in the Span. *Codonyer*; and have passed, through the Provence *Codoing*, into the Fr. *Coing*, and *Cognasse*; and thence, after the Conquest, into English as *Coine*. It was so written by Chaucer; but a variation to *Quoyne* and *Quynsys* took place in the 15th century, and thus originated our modern *Quince*, which has passed into Gael. as *Cuinnse*. The It. *Mela-cotogna* passed into Old Ger. as *Kutten-apfel*, or *Quitten-apfel*; and the latter has been shortened into *Quitte*, its present form, which occurs also in Swed. The other Teutonic names are all from the same stem, as the A. S. *Cod-æppel*; the old Dut. *Quede-appel*, now *Kwe*; and the Dan. *Kvæde*. The Boh. names, *Kutna*, *Kdaule*, and *Gdaule* may perhaps be extreme corruptions of the Lat.; but the other Slavonic names are distinct, as the Pol. *Pigwa*, and Rus. *Aiva*—the latter possibly Tartar, as it corresponds with the Turk. *Ayva*. The Hung. *Birs* stands by itself, unless it be connected with the Per. *Bih*. A distinct name exists in the Peninsula, in the Span. *Membrillo* and Port. *Marmelo*; which are derived from a Med. Lat. name, *Meli-melum*, and that in its turn from the Gr. μελιμηλον, a sweet apple, from μελι, honey, and μηλον, apple. The Port. name exists in English only in the word "*Marmalade*," in Port. *Marmelada*, the confection so called having been originally prepared from quinces, as appears also from its It. name *Cotognato*.

Medlar. Several names are attributed to this fruit in Per.; *Kuzsh*, *Azduf*, and *Zaar*; the last found in Ar., as *Za'úr*. Another Arab name is *Moshmala* (in Turk. *mushmala*) which is probably connected with the Gr. μεσπιλον; but whether it is a corruption of the Gr. name, or the Greeks

adopted their name from the Arabs I cannot determine. The only derivation of μεσπιλον that suggests itself is, that it is, like so many of the Greek names for fruit, of geographical origin, and connected with *Mespila*, a Persian town. From the Gr. comes the Lat. *Mespilum*, which is the source of all the present European names, except the Rus. The Italian has both *Mespola* and *Nespola*, a change of *M* into *N* which is found also elsewhere, as in the Span. *Nispera* and *Nespler*, the Port. *Nespera*, and the present Fr. *Nèfle*. The Old Fr. name given by Cotgrave, *Mesle*, is the immediate parent of our English name, which was sometimes written *Mele*, but by Chaucer's time had changed to *Medlar*, just as the Fr. verb *mesler* has come down to us as *meddle*. The A. S. had a cognate name *Mæd;* but also one descriptive of the aperient effect of the fruit, *Openers*, which is found up to 15th century, and is equivalent to one still in use in the L. G. dialects. The name in other Teutonic languages retains a greater resemblance to the Lat., being *Mispel* in Ger., Dut., Dan., and Swed.; in Celtic it appears in Bret. and Wel. both as *Mesperen* and *Gwisperen;* in Slavonic, in Boh. as *Nesspule* and *Nusspule*, and in Pol. as *Niesplik;* while it has spread into Bask as *Mizpeira*, and into Hung. as *Naszpolya*. Rus. has two names, both distinct from the series derived from the Lat., *Irga* and *Kizílinike*.

Pear. Of the Per. names for the Pear, one, *Amrúd*, is found in Ar. as *Armúd*, and in Turk. as *Ermod*. Another, *Ákhgúr*, may perhaps be connected with the Gr. names ἀχρας and ὀγχνη, which some derive from ἀγκειν to choke or throttle, just as the wild pear is called, in some parts of England, the *Choke-pear*, and in German *Wurg-birne*, having the same meaning, in allusion to the effect produced by the intense sourness of the fruit. If this derivation be correct, the Gr. name must have been applied to the sour wild fruit, for which afterwards only ἀχρας was retained, and ὀγχνη applied to the

cultivated fruit. *Achras* is still used in science as a specific name for the pear; and is probably the origin of the Slavonic names of the fruit, the Boh. *Krusska*, Pol. *Gruzka*, and Rus. *Gruscha;* possibly, even, through the herbalists, of *Acheria*, the Bask name for the wild pear.

Varieties of the cultivated fruit received from the Greeks distinguishing names from the places where they grew; and as we now speak of apples as Keswick-codlins and Newtown-pippins, so they called one kind of pear φωκις, from the town of that name, and another ἀπιος, or Peloponnesian. From the latter is formed a diminutive, ἀπιδη, which remains the name of the pear in modern Gr.

The only derivation that I find suggested for the Lat. *Pyrus*, is from πυρ, fire—the fruit, as it hangs from its stalk, resembling the shape of a flame, broad below, and tapering upwards; but this is far from satisfactory. From *Pyrus* are descended names applied to the fruit in all European languages, except the Slavonic family. In It., Span., and Port. it is written *Pera;* in Fr. *Poire*, whence our *Pear*. Other languages present but slight variations of these forms, the greatest being the change of *p* into *b* in the Ger. dialects, some of which also add an *n*. In S. Ger. the name occurs both as *Piern* and *Biern*, in the L. G. of Bremen as *Bere*, and in H. G. as *Birne*. The A. Saxons called the fruit *Pera*, but the tree *Pirige;* and the latter name, varied to *Piry*, *Piré*, and *Perye*, was used up to the 15th century.

Besides the series derived from the Lat., we find a few independent names for this fruit. The Welsh, besides *Peren*, call it *Gellyg* and *Rhwnen;* the Hungarian *Körte;* and the Basks *Udare*, *Madaria*, and *Uraria;* but I cannot trace whether these names are significant in the respective languages.

Sorb or Service-tree—Whitebeam. From the fruit of

Sorbus domesticus, L., the Romans prepared a beverage, alluded to by Virgil in the passage—

. . . . " Et pocula laeti
" Fermento atque acidis imitantur vitea sorbis,"
(*Geor.* III, 379.)

which Dr. Prior quotes in support of his derivation of " *Service,*" from the Lat. *cerevisia,* ale. With this I cannot agree, but believe rather that the English word is a mere corruption of the Lat. *Sorbus;* for the change of *b* to *v* is common, and found in the Port. names of this very fruit, *Sorva* and *Serva.* Virgil's allusion, however, quite explains the Lat. name itself, which is synonymous with *Sorbus,* a drink. The names in the S. of Europe, where the tree grows, are all derived from the Lat. In modern Gr. σουρβα has superseded the old name ὀνον or ὀον; It. and Span. have *Sorba,* and Fr. *Sorbe.* In the languages of Northern Europe the name is sometimes transferred to the closely allied Sorbus terminalis, Cr.; which we term *Service-tree,* and the Welsh *Sarff-wydden* (*wydden* = tree); and the fruit of which was in Gerard's time called *Sorbe-apple,* corresponding to the present Dut. *Sorbe-appel.* In Ger. it is termed *Sperber-apfel, Spier-apfel,* or *Spierling,* from *Sperling,* a sparrow; resembling thus in meaning the Gr. στρουθιον, wild quince; and indicating that the fruit is fit for birds only. The same idea presents itself also in another Dut. name *Lijster-bes,* or thrush-berry; in the Fr. name for the Rowan-tree, *Sorbier des Oiseleurs;* and in the Ger. name for its fruit *Vogel-beere,* bird-berry. Another Ger. name for the fruit of the Service-tree, *Ruhr-birne,* or flux-pear, seems to express the injurious effect produced by eating it. The same signification is possessed by the Dan. name *Tamvrid-abil* (*Tamvrid* = colic).

This tree and its fruit have many independent names in other languages, showing that it is native over nearly all

Europe; as the Swed. *Oxel*, varying locally to *Axul* and *Asald;* the Ger. *Else-beere* and *Arles-baum;* the Wel. *Rhafol* and *Cyrafol;* Bret. *Kerzin;* Boh. *Brek* or *Brak;* Pol. *Jarzab;* Hung. *Ökle, Tejhal, Pölehal,* and *Barkoca.* Some of these names probably include another closely allied tree, not always distinguished, which we know as the *White-beam* (*beam* in A. S. = tree) from the white colour of the under surface of the leaves. The same peculiarity originates its Ger. name *Mehl-baum* or Meal-tree, and the Swed. name for the fruit, *Molne-bär.*

Mulberry. It may be advisable to give here in the first place the derivation of "berry." The word can be traced back to the Scr. *Bhaksh,* to eat, whence *Bhakshya,* food; so that to speak of edible berries is in a manner tautological. The Lat. form *Bacca* survives in It., is changed in Port. to *Baga,* in Span. to *Baya,* and in Fr. to *Baie.* The initial *b* appears as *p* in the Gr. πυρην, the O. H. G. *Peri* or *Pere;* and in the Old Saxon *Pasi;* but other languages retain or resume the *b,* as in the Ger. *Beere,* Gothic *Basja* or *Basi,* Dut. *Bes* or *Bezie,* A. S. *Berig,* the immediate predecessor of our Eng. *Berry,* and in the Dan. *Bær,* Swed. *Bär,* and Ice. *Ber.* The Celtic forms are more modified, as the Bret. *Bel'ch,* and Wel. *Bacon.* The word has been adopted into Hung. as *Bogyo.*

Under the name "berry" we include fruits agreeing in their succulence and small size, but differing greatly in their structure. We apply it for instance to simple round fruits, like the Gooseberry and Cranberry; and also to aggregate fruits, consisting of a number of separate carpels, such as the Mulberry and Raspberry. To these last we find applied in different Arian languages a series of names, evidently related to each other. The names vary in their application; sometimes they are generic, as the Corn. *Moyar* and Bret. *Mouiar;* more frequently they are restricted specifically to one or other

of the fruits, as the Gr. *μορον* and Lat. *Morus* a Mulberry, the Slavonic *Malina* and Hung. *Malna*, a raspberry, the Wel. *Mwyar*, Ir. *Smeur*, and Manx *Smair*, a blackberry, and the Port. *Mor-ango*, a strawberry. This diversity of application is adverse to the etymology usually attributed to the classical names for the mulberry, which assigns to them a reference to its colour, and supposes them to come from *μαυρος* or *maurus*, black, a word that survives in our "moor." A more likely derivation is from *μειρω*, I divide or cut, presuming the names to have reference to the composite structure of the fruit*; but they may be from the root *mor* or *mal*, signifying softness or mellowness, and be related to the Lat. *molle*, L. G. *mör*, A. S. *mœrwa*, H. G. *mürbe*, Old Frank *mur*, and Fr. *meur*, all meaning soft. (See above under Melon.) There is a strange coincidence in the resemblance between the series of Arian names, and some of quite different origin, but equally meaning "berry." Thus in Lapland *muor* is a tree, *muorje*, a berry, the latter appearing in Esthonian and Wotiak as *muli*; and in Bask a berry is *mulkoa*, from *muru*, dim. *mulkoa*, a heap, pile, or bunch.

From the Lat. *Morus* come the modern names for the Mulberry in most European languages; as the It. and Span. *Mora*, Port. *Amora*, and Fr. *Mûre*, which varies in the patois de Berri to *Molle*. This interchange of *r* and *l* runs through the whole series of names: some languages have both, the Danes saying indifferently *Mor-bær* and *Mal-bær*, while Irish has *Mucoir* and *Maol-dearg*, (*dearg* = berry), and Gael. *Smeur* and *Maol-dhearc* (*dhearc* = berry). Some retain the *r*, as the Dut. *Moer-bezie*, A. S. *Mor-* or *Mur-berig*, Ice. *Mor-ber*, Wel. *Mor-* or *Mer-wydden* (*wydden* = tree), Boh. *Morusse*, and Pol. *Morwa:* and some substitute *l*, as the Ger. *Maul-beere*, our own *Mul-berry*, and Swed. *Mul-bär*.

* *Ostruz-ina*, the Boh. name for the blackberry, seems to express a like meaning, and to spring from the stem of *Ostruz-ky*, a segment.

The Bask names, *Másuta* and *Mázuza*, would by themselves almost appear to be independent, but there is another form *Mar-tchuka*, which makes it not unlikely that they are merely extreme corruptions of the Span. name.

The Per. name *Tút* has passed into Ar. and Turk., and is the origin of the Rus. *Toutovaie-iagoda* (*iagoda* = berry.) The Hung. *Eper* seems independent, but is in some degree generic, the Mulberry itself being *Fai-eper* (*fai* = tree), while the Strawberry is contrasted as *Foldi-eper* (*foldi* = earth).

Blackberry, Bramble. The fruit of the Bramble so closely resembles in appearance the black Mulberry, that we can readily understand how in some languages names have been given to it that are cognate with the classical name of the Mulberry; as the Wel. *Mwyar*, Ir. *Smeur*, and Manx *Smair*. More frequently however there is added some specific designation, and the name signifies the wild- or Bramble-mulberry. Thus in It. it is called *Moro-de-rovo*, in Span. *Zarza-mora* (*Zarza* = bramble), in Port. *Amora-de-silveira* (*Silveira* = bramble), and in Fr. *Mûre-sauvage*. Another series of names has direct reference to the colour of the fruit, as the Corn. *Moran-dhiu*, Ir. *Smeur-dub*, Gael. *Dearcag-dubh*, all meaning the same as our own *Black*-berry. In the Hung. *Hamvas-szeder* also, *Hamvas* signifies the colour of a cinder, while *Szeder* is apparently an independent name. The Lat. name *Rubus* would appear to have been originally bestowed on the Raspberry, and to be expressive of its red colour; but it was afterwards extended to include the Blackberry, and eventually came to indicate, when unqualified, the latter, the Raspberry being specifically distinguished as *Rubus idœus*, the Bramble of Mount Ida. From *Rubus* come the names of the Bramble in It. *Rovo*, and in Fr. *Ronce*, or, as it was formerly spelt, *Rouce*. An independent name is found in the Span. *Zarza*, and Port. *Sarça*: the latter language has

also *Silveira*, probably in reference to the Bramble being a wood- or wild-plant, in contradistinction to the cultivated Mulberry.

The Teutonic languages have a series of names from the same stem as our own *Bramble*, whose immediate predecessor was the A. S. *Bremel* or *Brembel*. The L. G. form was *Brummel*, surviving in the Dut. *Braam*, and Dan. *Bram*; while the O. H. G. *Pramo* is now represented by the Ger. *Brom*. Many and various are the derivations that have been suggested for these names. Casaubon thinks that they are from ῥαμνος or *Rhamnus*, the classical names for the Buckthorn, "for nothing is more frequent than putting β before "an initial ρ." Junius suggests that they come from βράβυλος "a genus of evil plants," or from βρεμειν, to sound; with which last Dr. Prior agrees, considering the words to be "connected etymologically with the Ger. *brummen*, Lat. "*fremere*, and others indicating noise." Their original root is the Scr. *brahm*, to whirl about.

While using *Bremel* for the plant, the Anglo-Saxons called the fruit *Heort-beri* (Hart-berry) after the male deer; in contrast to *Hind-beri*, their name for the Raspberry, as being a tamer and less robust kind of plant. In provincial English the Cloudberry (Rubus Chamæmorus) is still known as the *Roebuck-berry*. In the same way the Swedes call the blackberry *Bjorn-hallon* or Bear's raspberry, and the Dewberry (Rubus cæsius) *Bjorn-bär*, or Bear's berry; the latter name being also found in Ice. as *Bjonna-ber*.

The Celtic names for the Bramble—Bret. *Drez*, Wel. *Dyrisien*, Manx *Dress*, Ir. and Gael. *Dris*—mean primarily a thorn; and indeed names signifying thorny bushes in a general sense are often applied specially to the bramble. Besides the names above-mentioned, we find many other independent names for the Bramble, or its fruit, which show sufficiently its extended indigenous area. It will suffice to

give only a few of them—Per. *Turmúsh*, Gr. βατος, Rus. *Ejeníka*, Boh. *Ostruzina*, Pol. *Jezyna*, Bask *Lar* or *Lahar*, Turk. *Chaly*, and Ar. *'ollick*.

Dewberry. The present English name for Rubus cæsius, L., corresponds both in meaning and etymology with one of its Ger. names* *Thau-beere ;* and Dr. Prior has no hesitation in regarding it as the representative of *Thefe- Thife-* or *Thyfe-thorn*, a common A. S. name. Mr. T. Wright, however, identifies this with the Gooseberry, which at the present time is known as *Thape* or *Fape* in the Eastern Countries. I cannot presume to decide between two such authorities, but will merely state what evidence I am acquainted with bearing upon the point. In favour of Dr. Prior's view there is the resemblance of the two names *Dew* and *Thefe*, the change of *th* to *d*, and of *f* to *v* and *w*, both being agreeable to etymological rules ; but, on the other hand, there is quite as great affinity between *Thefe* and *Thape*, the change of *f* to *p* being equally common, so that this argument does not help us much. Turning next to the application of the old name, we find that *Theve-thorn* is used by Wyclif as a translation of the Lat. *Rhamnus* of the Vulgate, in the fable of the election of a king by the trees (Judges ix, 14, 15), where our present Version reads " bramble," with a marginal reading " thistle." In the A. S. and early English vocabularies, from Archbishop Alfric's in the 10th century to one of the 15th century, whenever *Thefe-thorn* appears, it is always as the equivalent of *Rhamnus*, so that thus far the identification is pretty certain ; the only question is what plant, known to them, did our forefathers consider *Rhamnus* to mean. Dr. Prior quotes this passage from Matthioli—" Monachi qui in Mesuem " commentarios edidere, Rhamnum existimaverunt rubum " quendam, qui humi repens, incultisque proveniens, mora " cæruleo potius quam nigro colore profert "—to show that

* Another Ger. name is *Kratz-beere*, or *Scratch-berry*.

ecclesiastical tradition had probably fixed upon the dewberry as representing *Rhamnus*. It is strange if this should be so, for it is evident that in Jotham's fable some plant is meant, either barren, or bearing fruit that is worthless compared with the olive, fig, or grape: while the dewberry is superior to the fruit of any other kind of bramble. The only time Shakespeare mentions the fruit is in "Midsummer Night's Dream," where Titania, giving orders to her attendants respecting Bottom, instructs them to "feed him with apricocks and "dewberries, with purple grapes, green figs, and mulberries;" and it is thus associated with figs and grapes, the very fruits to which Rhamnus is intended to be a contrast. In a vocabulary of the names of plants written about the middle of the 13th century,* and evidently intended for the use of a medical practitioner, explanations of the Latin names are given in Anglo-Norman, as well as in English. Thus *Fraga* is explained as *Fraser, Streberi;* next to which comes "*Ramni*, "*Grosiler, Thefe-thorn;*" there is no difficulty in identifying "*Grosiler*" with *Groseille* the Fr. for Gooseberry; so that this evidence, so far as it goes, entirely favours the identification of *Thefe* with *Thape*.

Dr. Prior says "the word '*theve*' seems to be related to "such as imply lowliness and subservience, Gothic *thivan* to "subject, *thivi* a female slave, &c.": to which I would add A. S. *thyfel* a shrub, underwood. It is intelligible that the gooseberry should have been regarded as a *Shrub*-thorn, as distinguished from the higher growing Hawthorn and Sloethorn on the one hand; and from the straggling brambles on the other.

Besides *Thau-beere* (Dew-berry), this fruit is termed in Ger. *Tauben-beere* (Dove-berry); and it has been suggested that this has arisen from the bluish bloom of the fruit, likened to *Dove*-colour; in which case our Eng. name may have a

* Harl. MSS., 978. 24.

similar origin, and come from the A. S. *Duua*, a dove. In Scotch it is called *Avron* or *Averin*, said to be from a Ger. *aver*, wild, though I do not find such a word.

Raspberry. This plant has such a number of independent names that it is only occasionally possible to connect together its titles even in allied languages. Its resemblance in structure to the Mulberry is marked by its Slavonic name, *Malina*, which is found in Rus., Boh., and Pol., and has passed into Hung. as *Malna*. The Lat. name *Rubus*, originally applied to it, has been noticed under Blackberry, as having reference to the colour of the fruit; but its distinctive names in the Romance languages are various. In It. it is called *Lampone;* in Castilian *Sangueso*, from the blood-like colour of the fruit; in Catalonian *Gers* or *Gerdrae;* and in the dialect of Aran *Yrdus*. Its Gallician name, *Frambueso*, is but little altered from the Fr. *Framboise*, which is considered by some to be a corruption of *Brambezie*, the Dut. name for the Blackberry; but the Dutch themselves call the Raspberry *Framboos*. The A. S. and old English name, *Hind-berry*, has already been noticed as given to this fruit, in contrast to the *Heort-berry* (Blackberry.) We find a similar name in the Dan. *Hind-* or *Hin-bær*, and in the Ger. *Him-beere* or *Himpel-beere*. How the old "*Hind*" came to be superseded in Eng. by "*Rasp*," it is not easy to imagine. The latter Dr. Prior considers "to be of double origin; being partly "corrupted from the Fr. *Ronce* or *Rouce*, a bramble, as *brass* "from *bronce*, and partly from *Resp*, as it is called in Tusser, "a word that in the Eastern counties means a shoot, a sucker, "a young stem, and especially the fruit-bearing stem of "Raspberries." In Swed. we find an independent name, *Hallon;* as also in most of the Celtic tongues—the Bret. *Tel*, Wel. *Mafon* and *Afon*, Ir. *Caor* and *Sugog*, the latter corresponding to the Gael. *Sughag* and *Suidheag*.

Strawberry. The Port. name of the Strawberry, *Mor-*

ango, has already been alluded to, as akin to that of the Mulberry. The same may be said of the Bask name, as that for Strawberry, *Mar-rubi*, (*rubi* = red) is evidently a contrast to that for Mulberry, *Mar-tchuka*. In like manner in Hung. *Fai-eper* (*fai* = tree) means Mulberry, and *Foldi-eper* (*foldi* = earth) Strawberry, in allusion to their different habits of growth. This distinguishing feature of the Strawberry, that it trails along, and bears its fruit on, the ground, gives rise to its name in many languages. Thus the Arabs call it *Tút-el-erdth* (earth-mulberry); and the modern Greeks χαμο-κερασος (earth-cherry). The Slavonic names convey the same allusion, viz.:—Pol. *Poziemka* (*ziema* = earth, and *poziemy* = terrestrial); Boh. *Zemnice* (*zem* = earth); and Rus. *Semlia-nika*.

The Teutons call it simply "earth-berry," this being the meaning of the Ger. *Erd-beere*, Dut. *Aard-bezie*, Dan. *Iord-bær*, and Ice. *Iardar-ber;* while the Swedes apply *Iord-gubbar* to the cultivated plant. Our own *Strawberry*, from the A.S. *Streow-berig*, expresses, although less directly, the same idea. It has reference not, as has been suggested, to gardeners using straw to keep the fruit from being dirtied by soil, nor to the wild fruit being in some parts of England offered for sale threaded upon grass-straws; for the name existed long before either of these customs is at all likely to have prevailed; but it means that the plant trails or is "strawn" upon the ground.

The names of the Strawberry in Romance languages, other than Portuguese—the It. *Fragolo*, Valencian *Fraulera*, Castilian *Fresa*, and Fr. *Fraise*—are all evidently descended from the Lat. *Fraga*, which Facciolati considers to come from the Gr. ραξ, gen. ραγος, and to be based on a resemblance between the strawberry and grape! I cannot conceive that this is a correct etymology, but am not able to suggest a better. Amongst Celtic languages, the Gael. name *Suidheag-lair* connects the Strawberry with the Blackberry; the

Corn. *Moran-cala,* is composed of the generic term *Moran,* and a specific epithet; but the other names are independent. The Bret. *Sivi* corresponds with the *Syfi* of S. Wales; while in N. Wales the name is *Mefus* or *Mefys,* and in Ir. *Tlacd-sud.* Other names, alternative with some given above are the Swed. *Smultron,* meaning the wild plant; the Rus. *Kloudnika;* Boh. *Cerwene-gahody* (red-berry); Hung. *Szamocza;* modern Gr. κουμαρον, and Ar. *Tut-frangi* (Frank-mulberry).

Gooseberry. Amongst our cultivated fruits the *Gooseberry* is remarkable for growing on a bush furnished with thorns or spines; and it is accordingly this feature that has served most frequently as the basis of its original names. In It. it is called *Uva-spina,* from *uva* grape, and *spina* thorn, corresponding to the Span. *Uva-espin* and Port. *Uva-espim.* In Ger. it has an original name *Stachel-beere* (prickle-berry), changed in a L. G. dialect to *Stikk-bere,* in Dan. to *Stikkelsbær,* and in Swed to *Stikkle-bär.* Its Rus. name *Krijornike* (*krij* = cross) refers to a peculiarity of the spines, which grow three together, radiating from a common base, so as to assume the shape of a cross. This is also alluded to in the Dut. name *Kruis-bezie* (cross-berry), the origin of a Wel. name *Grwys,* of our own *Goose-berry,* and of the Swed. *Krus-bär.* This name formerly existed in Ger. as *Kreutzbeere* (cross-berry),* but is more frequently changed to *Kraus-beere,* which may be read as meaning "crisped-berry," and *Krausel-beere.* These Ger. names have given rise to the two names applied to this fruit in herbalists' Lat. The first, *Uva-Crispa,* translates the apparent meaning of *Krausbeere,* in which it is followed by the Sp. *Espina-crispa:* the second, *Grossularia,* or, as Gerard writes it, *Crossularia,* is a latinization of *Krausel-beere.* From it are descended the Castilian *Grossella,* and Fr. *Groseille;* and from the latter

* Matthioli, A.D. 1586.

in turn the Gael. *Groiseid*, and lowland Scotch *Grosser*, *Grossart*, and *Grosset*. It has even passed back again into Ger. as *Grossel-beere*. Other names connected with this series, though in a more corrupt form, are the Hung. *Egres*, and the Catalonian *Agrasous*.

The Bretons have a name for the Gooseberry, *Spezad* or *Spechad*, with the meaning of which I am not acquainted, unless it refers to the spines, like the Ir. *Spionan*, and the Wel. *Eur-ddrain* (golden-thorn). Lastly, the Bask name *Mahats-larra* means literally bramble (or thorn) grape.

An old Eng. name is *Feaberry*, which Gerard records as locally used in his native county of Cheshire. Dr. Prior shows that it is connected with an East Anglian name, different forms of which are *Feap-berry*, *Fae-berry*, *Feabe*, *Fape*, *Theabe*, and *Thape*; for "an interchange of an initial "*f* and *th* is not uncommon. We find it, for instance, in the "verb *fly*, Gothic *thliuhan*, O. H. G. *fliohan*, Ger. *fliehen*; "and in *thatches*, a dialectal pronunciation of *Vatches*,—i.e., "*fitches* or *vetches*,—to be heard in some parts of Somerset." He considers that the name has been adopted from a bad picture of a melon, made to look exactly like a gooseberry, and headed with the old Ger. name "Pfebe;" but it is hardly likely that a popular name of so common a fruit as the Gooseberry would be taken from a figure in a herbal. Mr. Wright, on the contrary, considers "*thape*" to be the representative of the A.S. *thefe-thorn*, a view which we have already fully discussed under Dewberry.

Currant. Of the Eng. names that were applied to the Red Currant the one that has the greatest appearance of being original is *Garnet-berry*, from the "rich red colour and "transparency" of the fruit, which gave it also another name "*Red Gooseberry*." Our present name *Currant* is comparatively modern, and arose from the fruit having been confounded with the small raisins so-called, which are imported from the

Levant, and termed by the French *Raisins de Corinthe*, from their coming, or being supposed to come, from Corinth. This imagined identity led to another name *Raisin-tree*, and was probably the origin of a term for the fruit "*Beyond sea* "*Gooseberry*;" which literally translates an old Fr. name, mentioned by De Candolle, *Groseille d' outre mer*; and corresponds with the Swiss names he records *Raisin de mare* in the French-speaking and *Meer-trubli* in the German-speaking cantons.

The Lat. name, *Ribes*, is equally the result of a false identification. Amongst the medicines of the mediæval Pharmacopæia was a certain "Rob de Ribes," of Arabian origin, to which great virtues were attributed. It was found however that a good imitation of it could be prepared from Currants; and thus the name *Ribes* came to be applied to the Currant, "the faculties consenting thereto" as Gerard writes. The name thus conferred survives in the It. *Ribes*, in the Catalonian *Riber*, and was formerly found in Fr., both unchanged, and as a diminutive, *Ribette*. From it also comes the Dan. *Ribs*, the Swed. *Rips* or *Risp*, and the Hung. *Ribiszke*, shortened by dropping the first syllable into *Biszke*.

In Ger. the Currant was called *Traublin* and *Beerlin*, diminutives respectively of *Traube*, a bunch of grapes, and *Beere*, a berry. It was also termed *St. Johann traubell*, probably from its ripening about St. John's day, and this name now survives in the slightly modified form *Johannis-beere* (John's berry). The comparison of the currant with the grape is also found in the Turk. name *Frenk-üzüm* (Frank-grape).

Berberry or Barberry. The origin of this name is found in the Ar. *Barbarís*, said by Bochart from a Phœnicean word *barar*, which expresses the brilliancy of a shell, alluding to the plant's shining leaves. The name has passed into Per. as *Barbarí* and *Embarbaris*; and was adopted into Med. Lat.

as *Berberis*. Thence it has spread into most European languages; as the It. *Berberi*, Span. *Berbero*, Ger. *Berberitze*, Dut. and Dan. *Berberisse*, Swed. *Berberis*, our own *Berberry*, and Pol. *Berberys*. More corrupt forms are the Hung. *Borbolya*, and the Rus. *Dardarikhe*, in which the *b* is changed to *d*, and from whence probably comes the Boh. *Drac*. The Portuguese call the plant *Pibri-teiro*, the first part of the name being no doubt a corruption of the Lat.; and rendering it likely that so is also *Piprige-tree*, an old Eng. name recorded by Turner. Dr. Prior however reads this as *Pip-rouge* (red-pip), from Fr. *pepin* and *rouge*, "a name descriptive "of the colour and character of its small juiceless fruit, "which seems to be rather a pip than a berry."

Apart from the Latin-descended names we find this plant called *Sauer-dorn* (sour-thorn) and *Saurach* in Ger., *Sür-torne* in Swed., *οξυ ακανθα* (sour-thorn) in Modern Gr., *Soskafa* (*soska* = sour) in Hung., and *Agracejo* (*agrio* = sour) in Span., all these names having reference to the sourness of the fruit. The It. *Crespino*, and Wel. *Ysbin*, express the *thorny* nature of the plant; as also the Fr. *Epine-vinette*.

Elder. The branches of this tree have a pith so soft as to be readily extracted by boring, and they are thus readily rendered hollow. This gives rise to an Eng. name *Bore-tree;* and seems also to be the origin of the Ger. name *Holun-der* or *Hol-der*, the first syllable coming from the same root as our words *hull* and *hollow*, the second connected with the Scr. and Zend. *dru*, Gr. *δορυ* and *δρυς*, and Slavonic *dervo*, all meaning *tree*, which is itself from the same root. From *Holder* the transition is not great to the Dan. *Hyld*, the Swed. *Hyll*, the A.S. *Ellen* and *Eller*, and our present *Elder;* but Dr. Prior considers these words "to mean 'Kindler,' "and to be derived through A. S. *æld*, Dan. *ild*, Swed. *eld*, "fire, from *ælan*, to kindle, ... a name which we

‘ may suppose that it acquired from its hollow branches being “ used, like the bamboo in the tropics, to blow up a fire.” Ger. has another name *Flieder*, found in Swed. as *Fläder*, and in Dut. as *Vlier*.

The old Gr. name ἀκτη is somewhat remarkable, for the plant is not at all a littoral species. It may be geographical in origin, and refer to ἀκτη, an old name of Attica. It is changed in modern Gr. to the more special term παμψυκος ἀκτη, and seems to have left no other descendant; but several existing European names come from the Lat. *Sambucus* or *Sabucus*. This name is said to come from the Gr. σαμβυκη, Lat. *sambuca*, a musical instrument, supposed to have been made of Elder-wood; the name of the thing made passing to the tree from which it is made, just as the Rowan and Ash are called after the rune tablets and spears for which their wood was used. The It. *Sambuco*, Port. *Sabugeiro*, Span. *Sauco*, and Bask. *Sabuka* and *Sahuka* retain some resemblance to the Lat.; but the Fr. *Sureau* diverges more; and as the successive steps by which this divergence has taken place can be traced, it may be worth while to detail them, as an example of the gradual manner in which changes, ultimately great, are brought about. The *b* in the Lat. *Sabucus* was first changed to *h*, and then dropped altogether, the transition forms still existing in the patois of Languedoc, *Sahuc*, and of Provence, *Saüc:* the final *c* was next dropped, and the name became the old Fr. *Seü*, which survives as *Seyu* in Picardy and Burgundy. “ Towards the “ end of the middle ages the simple *Seü* is replaced by its “ diminutive *Seüerel*, composed of the root *Seü* and suffix “ *erel*, which is from Lat. *arellus*. By *el* becoming *eau*” (a change frequent in Fr., as *Agneau*, from *Agnel*), “ old Fr. “ *Seüerel* is contracted euphonically to *Seürel*, then to *Seurel*, “ whence the old form *Seureau*.”*

* Brachet’s *Etymological French Dictionary*, p. 347.

Still more unlike the Lat., though evidently derived from it, are the Bret. *Skav* and *Skao*, and Wel. *Ysgaw*, with which latter may be compared *Yezgo*, the Span. name for the dwarf Elder.

Among Slavonic languages the Pol. *Bez* is connected with the Boh. *Bezynka*, but Rus. has a distinct name *Dousvina*; and independent names also occur in Hung. *Bodza*, Turk. *Mürver*, and Ir. *Trum*.

Bilberry, Bleaberry, Whortleberry. Of these, our present English names, the first two refer to the colour of the fruit, *Bilberry* coming from the Dan. *Bölle-bær* (dark-berry) and corresponding with the Ger. *Schwarz-beere* (black-berry); while *Bleaberry* is akin to the Swed. *Blå-bär*, Ice. *Blá-ber*, Dan. *Blaa-bær*, Ger. *Blau-beere*, and Dut. *Blaau-bes*, which may all be translated Blue-berry. The colour indicated by the Scandinavian words is however not exactly blue, but rather what we should term livid; for in Swed. a negro is called *Blå-mand*. The adjective *blae* still exists in the Cleveland district of Yorkshire, and is defined as meaning "a livid or "pale bluish colour." As applied to the berry, it has reference to the bluish bloom that covers it. In this respect, and indeed in appearance generally, the berries resemble those of the Myrtle, whence the specific name which the plant bears in science, *Myrtillus*, or little myrtle, the Span. *Mirtillo*, and our own *Whortle-berry*, which is merely a corruption of *Myrtle-berry*. Provincially it is varied to *Whurts*, *Blackworts*, *Hurtle-* and *Huckle-berry*.

Growing principally on heaths, the plant receives from this circumstance its name in Ger. *Heidel-beere* and Gael. *Dhearc-mhonaidh*, both meaning heath-berry; also in Manx *Freoaghane* (*Freoagh* = heath) and in Ir. *Fraocan* (*Fraoc* = heath). Being native over nearly all Europe, although in the S. confined to alpine situations, the plant has besides many independent names, as the Span. *Arandano*, Fr. *Airelle*, Wel.

Llûs, Ir. and Gael. *Breileog* or *Braoileag,* Rus. *Tchernika,* Pol. *Brusznica,* Boh. *Boruwka* and *Cicoritka,* Hung. *Afonya,* and Lapland *Sarre.* Some of these names are, however, generic, and include other similar berries, or refer to Vaccinium uliginosum, which may almost be said to be popularly regarded as one and the same species as V. myrtillus: indeed amongst these wild berries names are used very loosely and inaccurately.

Cowberry. Distinguished from the Bilberry by the red colour of the fruit, this is sometimes termed in English merely *Red bilberry,* equivalent to Fr. *Airelle-rouge,* and Hung. *Veres-afonya.* It is in Northern countries that we find it has a distinct name. The Laplanders call it *Jogna;* the Swedes *Lingon (Ling* = heath); the Danes *Tytte-bœr,* and *Krösing-bœr* or *Krösslinger,* the latter probably from *Krœs,* dainty;* and perhaps the origin of the Ger. *Preissel-beere.* Our own name *Cowberry* arises apparently from a blunder between *Vaccinium,* the generic name of science, and *Vaccinum,* what belongs to a cow. *Vaccinium* itself is a classical name of disputed etymology, some considering it to be identical with the Gr. ὑάκινθος. It is quite uncertain to what plants Lat. authors applied it, for it was probably used for more than one, and may have included the hyacinth, or violet.

Cranberry. This name seems to be of Scandinavian origin; the Swed. *Tran-bœr,* and Dan. *Trane-bœr,* both meaning Crane-berry, have passed into Ger. as *Krahn-beere,* and to Eng. as *Cran-berry;* while the Fr. *Canneberge* is probably a corruption of these last. This name is given to the fruit, according to Dr. Prior, from its being ripe in the spring, when the Crane returns; but another suggestion is that it is from its being eaten by that bird; and yet a third that it is from the peduncles of the flowers being crooked at

* The other Danish name may express the same idea, as will be seen by comparing *Tytte,* with our *Tit*-bit.

the top, so that before the expansion of the flowers they resemble the head and neck of a Crane. From the localities in which it grows this plant is sometimes known as the *Bog-wort* or *Bog-berry*, as *Fen-berry*, *Moor-berry* or *Moss-berry*, the last agreeing with the Ger. name *Moos-beere*. It has independent names in Wel. *Llygaeron* and *Ceiros-y-waun*; and in Gael. *Muileag* and *Gearr-dhearc* (hare-berry.)

Bearberry. This name, according to Dr. Prior, arises from the fruit being a favourite food of bears. It is equivalent to the names in Ger. *Bären-traube*, Fr. *Raisin d'ours*, Rus. *Medviédjie-iagoda*, and Hung. *Medve-szolo*; and also to the Castilian *Uvaduz*, if this can be regarded as a corruption of *Uva d'urse*. Another Castilian name, *Gayuba*, is independent, while the Catalonian name, *Buxarola*, is connected with the Fr, *Busserole*. A second name for this berry is found in Hung. *Kukojcza-bogyo* (Cuckoo-berry); and in English it is also termed *Mealberry*, equivalent to the Dan. *Meel-bær* and Swed. *Mjöl-bär*, and considered by Dr. Prior to be "from the floury character of the cellular structure of "the fruit."

Crowberry or Crakeberry. These names, like most of those which we use for our wild berries, are of Scandinavian origin, and come from Old Norse *Kraka*, a crow, the cognate forms being Dan. *Krake-bær*, Swed. *Krăk-bär*, Ice. *Krœki-ber*, and Ger. *Krähen-beere*. They refer to the colour of the fruit, "as black as a crow." Another German name, *Rausch-beere* (intoxicating-berry), seems to indicate that the berry has been used in the preparation of a drink; and this is confirmed by its names in Hung. *Mámorka*, meaning literally "drunk," in Rus. *Vodianiga* (*vodia* = water), and in Finnish, the name in that language meaning *Water-berry*.

Chestnut. The Greeks called the Chestnut κάρυον ἐυβοικον, i.e., Eubœan nut, as well as κάρυον κασταυιων, or more shortly κάστανα, from Castana, a city of Thessaly. This latter name

has spread into neighbouring languages—into Per. as *Kastal*, into the Ar. of Syria as *Kesten*, and into Lat. as *Castanea*, through which it has since descended into the later languages of Europe. The It. *Castagna*, Sp. *Castaña*, Port. *Castanha* present very little change. The modern French has dropped the *s* in *Chataigne*, but it was formerly written *Chastaigne;* and from this older form came the Old Eng. *Chestein*, as in Chaucer, and *Chesten*, whence, with the subsequent addition of *nut*, as expressing the nature of the fruit, our present *Chestnut*. The A. S. name was *Cist* or *Cystel*, the other Teutonic forms being Ger. and Dan. *Kastanie*, Dut. and Swed. *Kastenj*, and Ice. *Kastania*. The Bret. has *Kistin* and *Gistenen*, Wel. *Castan*, Boh. *Kasstan*, Pol. *Kasztan*, and Rus. *Kachtáne*. The name has also passed into non-Arian languages, as the Bask *Gastaïna*, Hung. *Gesztenje*, and Turk. *Kastáne*.

Another series of names originates with the It. *Morroni*, which is found in Old. Span. as *Morone*, in Fr. as *Marron*, and in Ger. as *Marone*.

Walnut. This nut has a simple Per. name *Gúz*, corresponding to the Hebr. *I'góz*, and Ar. *Jauz*, which is found in Turk. as *Javz*. The Greeks probably received the nut from the Persians, as one of their names for it was κάρυον περσικον (Persian nut), but they also called it κάρυον βασιλικον, or royal nut. Κάρυον is a generic term, and evidently comes from καρη, a head, most likely originally in allusion to the shape of nuts, but according to Pliny from their producing headache. This has led to the suggestion that the corresponding Lat. word, *Nux*, may come from *nocere*, to hurt, "quod capiti noceat;" but it is evidently from the same root as knit, knot, knopf, knob, implying a hard round lump. The specific name of the Walnut in Lat. was *Juglans*, a contraction of *Jovis glans* or Jove's acorn; but modern Romance languages restrict to it names that are derived from the primarily generic *Nux;* as

the It. *Noce*, Sp. *Nuez*, Port. *Noz*, and Fr. *Noix*. Similar names run through the Teutonic and Celtic languages, but are in them, as *Nux* was in Lat., generic; as the Ger. *Nuss*, Dut. *Noot*, A. S. *Hnut*, Dan. *Næd*, Swed. *Nöt*, Wel. *Cnau*, Ir. *Cno*, Gael. *Chno* or *Cnudh*.

To Central Europe the Walnut seems to have been introduced from Italy; as the Lith. *Itoliskas-ressutys*, Boh. *Wlasky-orech* and Pol. *Orzeche-wloski* all mean "Italian nut;" and although the Ger. *Walsche-nuss* may be translated "foreign nut," the term *Walsche* was more particularly applied to the Italian. It has since been shortened into *Wall-nuss*, which is found in Dut. as *Wal-noot*, in Dan. as *Wal-næd*, and in Swed. as *Wal-nöt*. The A. S. name *Wealh-knut* meant, like the Ger., foreign nut, and thence our present *Walnut;* but there was formerly a modification of the name, *Welsh-* or *Walsh-nut*, which seems to have come direct from the Ger., and was in use as late as Gerard's time. The Wel. name *Cneuen-ffreinig*, and the Gael. *Chno-ffranach*, both mean "French nut." Other names are Rus. *Greczkoi-orjech* (Greek nut); a Ger. name *Lamberts-nuss*, which according to Max Muller means Lombardy-nut; and L. G. *Ooker-not*, surviving in the Dut. *Okker-noot*. The Hung. name *Dió* is entirely independent; as also the Bask *Elzaur*, *Intzaür*, and *Inchaür*.

Hazel. The Gr. names for the hazel *nut* were κάρυον λεπτον, small nut, which survives in Modern Gr., and κάρυον ποντικον, Pontic nut, a designation apparently geographical, and probably the origin of the Ar. *Bondoq*, Per. *Funduk*, and Turk. *Fyndyq*. For the *bush* the Gr. name was κορυλος, found in Lat. as *Corylus;* and these classical names are etymologically closely related to the Teutonic name *Hasel*, though so unlike in appearance. The Gr. κ and Lat. *c* are, according to Grimm's law equivalent to the Teutonic *h**;

* Compare Gr. καρδια, Lat. *Cordis*, with Ger. *Herz* and Eng. *Heart*.

and *s* is, in the classical languages, sometimes turned into *r* when it stands between two vowels.*

In the Celtic languages Grimm's law would lead us to expect that the initial *k* sound would be retained, and we shall find that it is, although the *r* is dropped entirely. It is evident, therefore, that these names have descended to their different families of languages from some common ancestor.

Dr. Prior's explanation of the Teutonic word is as follows:—
"A.S. *Hæsl* or *hæsel*, ... the instrumental form of
"A. S. *hæs*, a be*hest*, an order, from A. S. *hatan*, O. H. G.
"*haïzan*, Ger. *heissen*, give orders, a hazel stick having been
"used to enforce orders among slaves and cattle, and been
"the baton of the master. J. Grimm (Gesch. d. Deuts.
"spr. p. 1016), observes, 'Dir hirt zeigt uns das einfache des
"'fürsten, des ποιμην λαων, und sein *hasel stab* erscheint,
"'wieder im zepter der Könige: hafa i hendi heslikylfo'
"[hold in hand a hazel staff], an expression that occurs in
"Sæmund's Edda, in the second lay of the Helgaquida,
"Str. 20."

While agreeing with the above derivation, I am bound to state that an entirely different one is supported by some, who derive the Teutonic names from the conspicuous husk or beard in which the nut is enveloped, and refer to the following words as being cognate. Dan. *Hase*, the beard of nuts, *haas*, *haser*, the beard of corn; *fas*, Swed. *fuas*, the beard of nuts, Bavarian *hosen*, *fesen*, the husk of corn. In Eng. the word *hose* was formerly used in the same sense, as appears from the explanation given in Florio's Italian Dictionary of the word "follicoli," viz.:—"the hull, *hose*, peel or thin skin "that encloseth any wheat or rye when it is green." (Wedgewood.)

The Lat. form is represented in modern languages by the

* As in Genu*s*, Genera*s*. Compare also Yesterday with He*r*i.

Fr. *Coudre.* " *Corylus* regularly contracted into *Cor'lus,* has " had its *l* transposed, and becomes *Col'rus.* (The word " *Colrina* is to be seen in a 9th cent. document.) *Colrus* " becomes O. F. *Coldre,* by regularly contracting *lr* into *ldr,* " whence *Coudre* by softening *ol* into *ou.*" (Brachet, Etym. Dict. p. 97.) The Celtic names, though they present some outward resemblance to the first syllable of the old Fr. *Coldre,* have in all probability not been derived, like it, from the Lat., but have descended from some anterior form. The variations are Wel. *Collen,* Ir. *Coll* or *Coill,* Gael. *Call-trun,* and Bret. *Kelvez.* Those of the Teutonic name are, Ger. *Hasel,* Dut. *Hazel,* A. S. *Hæsl* or *Hæsel,* passing into old Eng. *Hasell* and our present *Hazel,* Dan. *Hæssel,* and Swed. *Hassel.*

The Romance languages, while they restrict specifically to the Walnut names derived from the Lat. *Nux,* apply to the hazel-nut diminutives formed from them, as the It. *Nocelle* or *Nocciuolo,* Sp. *Nocher,* and Fr. *Noisette.* They have also another series of names, It. *Avellane,* Sp. *Avellano,* Port. *Avelãa,* and Fr. *Avelline,* which are all slight modifications of the Lat. *Avellana,* a name which, Pliny states, was given to nut from Abella, a town of Campania. Of independent names may be mentioned the Boh. *Leska* or *Leskowy,* in Pol. *Laskowy ;* the Hung. *Mogyoro ;* and Bask. *Ur.*

ON SOME INEDITED DISCOVERIES OF ROMAN REMAINS IN LANCASHIRE AND CHESHIRE.

By W. Thompson Watkin, Esq.

(Read March 23rd, 1876.)

With the exception of the short account which appeared in the newspaper paragraphs which I shall quote, the discoveries of which I now treat have remained inedited, though they have each a considerable degree of interest as affecting the history of the localities where they occurred.

The first one to which I shall allude is thus recorded in the *Liverpool Mercury* of May 26, 1837 :—"A number of Roman "coins, some so defaced as to be illegible, others of the reigns "of Probus, Victorinus, Gallienus, and Tetricus, were dug up "in removing some stone work at Wigan the other day."

The chief point connected with this discovery arises thus :— In the *Archæological Journal*, vol. xxviii, p. 115, in an article on the Tenth Iter of Antoninus, I fixed the site of the Roman station *Coccium* at Wigan, from the fact of its distance from Manchester on the one side, and from Ribchester on the other, along Roman roads agreeing with the distances from *Coccium* to *Mancunium* and *Bremetonacae* respectively. At that time the only known discoveries at Wigan (so far as the knowledge of antiquaries went) were a number of funeral urns, and a fine gold coin of Vitellius which I noticed in the *Archæological Journal*, vol. xxx, p. 153, and which is now in the Society's possession. This further discovery of coins raises the question, Was not the stonework, in removing which they were found, also of the Roman era? I incline to this opinion. The

account would seem to suggest that the coins were found embedded in the wall. Perhaps there are yet some persons living who remember the discovery; if so, and they see this article, I hope they will make public what knowledge they possess.

The second discovery occurred in a district which has hitherto been considered destitute of Roman remains. With the exception of the coins, fibulæ, &c., found at Meols, no account has been preserved of anything of the Roman period having been found in the peninsula of Wirral, unless the wooden bridge found spanning the Birket be of that period, which is doubtful.

The discovery, which also is recorded in the *Liverpool Mercury*, January 31st, 1834, in a communication from a correspondent, is as follows:—"As some workmen were last "week removing the surface of the land on the Arno Hill, in "the township of Oxton, Cheshire, for the purpose of obtain- "ing building stone, they were surprised by the appearance of "a quantity of small coins among the rubbish, the greater "part of which proved to be so completely decayed as to "easily rub to powder between the hard fingers and thumbs "of the quarrymen; they however picked out what they "considered to be a few farthings, and scattered the rest "among the loose soil. The coins saved, from having been "only from 18 to 20 inches under the surface, are so decayed "as to render it difficult to establish * * to what periods "some of them relate. The most distinguishable have the "heads of Antoninus, Honorius, and Marius Victorinus. * * "From their size they may be considered as the semuntio or "sextulae, the smallest coins of the Romans. On the reverse "of the Victorinus, is a figure with a weeper in each hand, "exactly such as at the present day are borne before the "funerals of the rich, and the motto appears to be 'Niobe in "'litum.' * * The Arno Hill, where the coins were found,

" gives the most perfect idea of a Roman encampment. * * " The coins are in the possession of Capt. Colquitt, R.N." &c.

The coin of Victorinus, alluded to, is certainly erroneously described. The reverse is evidently one of the FIDES MILITVM type: a female figure holding a standard in each hand. The above letters, half obliterated, might easily be mistaken by one inexperienced in numismatics for NIOBE IN LITVM (!!) a peculiarly astounding reading. The hoard would appear to have been deposited in the ground during the troubled period which marked the close of the dominion of the so-called " Thirty Tyrants," probably in the reign of Aurelian or that of Claudius Gothicus (A.D. 268 to 275), and was doubtless similar in its composition to many others of that epoch constantly found in Britain.

It has hitherto been uncertain where the Roman road leading from Chester to Caerhun (*Conovium*) left the former city, and what was its course after leaving. Perhaps the following discoveries may throw light upon the subject. In the *Chester Courant*, November 13th, 1832, occurs this paragraph:— " On Tuesday last, the workmen employed in excavating the " new road to the Little Roodee, through the city walls near " the Castle, found a Roman lachrymatory, of fine red earthen- " ware * * ; it was brought to our office in a very excellent " state of preservation. Several Roman coins and vessels " were also found," &c.

This plainly appears to have been the discovery of a Roman interment. These interments generally took place along the side of the roads leading from a city or *castrum;* and the one in question may indicate the close proximity of the before-named missing road. This probability seems increased by a discovery which took place in June, 1874, and which is described in the *Chester Courant*, 24th June, 1874, and in the *Archæologia Cambrensis*, vol. v, 4th series, p. 260. It was of a Roman inscribed tombstone, found on the Roodee,

in the course of excavations for a new intercepting sewer. It was standing nearly upright, the top being about three feet below the surface. Considering that it is of the sandstone of the neighbourhood, it is in good preservation. The inscription is—

D. M.
FL. CALLIMOR
PHI. VIX. AN. XXXXII.
ET. SERAPIONI. VIX.
ANN. III. M. VI. THESA
EVS. FRATRI. ET. FILIO.
F. C.

i.e., Diis Manibus. Flavii Callimorphi vixit annos xxxxii. et Serapioni vixit annos iii. menses vi. Thesaeus fratri et filio faciendum curavit. The English translation of this is:—"To the divine shades of Flavius Callimorphus, he lived forty-"two years; and of Serapion, he lived three years and six "months. Thesaeus to (his) brother and son, caused this to "be made." A human skull and a number of bones were found beneath the stone, and a number of fragments of Samian ware not far off. This tombstone, which is now in the possession of the Chester Archæological Society, I may add from personal inspection, is 4 feet high by 28 inches broad and 7 inches thick. Above the inscription there is sculptured "a representation of the recumbent figure of an adult and "child, and beneath that a table supporting a lamp and three "urns." It will thus be seen that the stone is very similar to that found in 1859, in excavating for the foundations of the Chester New Corn Exchange,* with the exception that the former has a pediment above the sculpture.

I have now to add a few words with regard to a very interesting pig of lead, weighing 168 lbs., discovered in Commonhall-street, Chester, in 1849, and now preserved in the

* Now preserved at the Water Tower Museum.

Chester Archæological Society's Museum, bearing an imperfect inscription which has generally been read as

CAESARI . . . . . VADoN

but without any attempt at expansion or translation. On some pigs of lead found in Derbyshire the following inscriptions occur, which may possibly give the key for the correct reading and expansion of that found at Chester :—

(1.) IMP. CAES. HARDRIANI. AVG. MET. LVT.

(2.) C. IVL. PROTI. BRIT. LVT. EX. ARG.

(3.) L. ARVCONI. VERECVNDI. METAL. LVTVD.

The conclusion arrived at by archæologists, with regard to these, is that LVT. and LVTVD. are abbreviations of the word LVTVDAE, the name of a Roman station given by the anonymous Chorographer of Ravenna, as existing in Derbyshire. Let us see whether the termination of the inscription found at Chester similarly contains the name of a town. From personal inspection of the pig, I have found that it is by no means certain that the last letters are VADON. That the three last are DON seems correct, the N being reversed thus, N, the two preceding may be NA or AN, in the latter case the N being probably reversed. They are again preceded by an S, the whole thus reading SNADON or SANDON. Now in the Chorography of Ravennas we find placed between Chester *(Deva,)* and Caerhun *(Conovium,)* and immediately preceding the former, a town bearing the name of SANDONIVM, and in one manuscript copy of the work (that preserved in the library of the Vatican,) it is called SAVDONIVM. The resemblance between the abbreviation of the name of this town, and the termination of the Chester inscription is very close, and I strongly hold the opinion that the latter contains the abbreviation of the name of the town. I may add that Professor Hübner of Berlin, the author of *Corpus Inscriptionum Latinarum,* also expresses the opinion that a town is named in the inscription, but he apparently

has failed to recognise the name of *Sandonium*. But where was this town ? It must have been where lead was produced, and the only sites, in the neighbourhood mentioned by the Chorographer of Ravenna, that will answer, are at *Croes Atti*, near Flint, where immense heaps of scoriæ remain mixed with Roman coins, fibulæ, styli, &c., and where foundations of buildings have been turned up by the plough ; or at Caergwrle, where are also extensive evidences of a Roman settlement, whose occupants were engaged in smelting, but in all probability the first mentioned place is the correct site.

Another Roman inscription found at Chester in 1653, has at last, after a long absence, returned to the city of its origin. It is a fine altar, erected for the welfare of some of the conjoint emperors, probably Severus and Caracalla, though Horsley erroneously attributes it to Maximianus and Diocletian (Horsley, *Brit. Rom. Cheshire*, No. 3.) He says it was then in the possession of the Rev. Mr. Prescot. With the descendants of that gentleman it has remained until the pre sent year (1875,) though in various works it has been reported as missing or lost. In May, 1874, the Rev. C. K. Prescot, who had been Vicar of Stockport since 1820, informed me that it was in his possession. In writing to Mr. Franks, of the British Museum, I informed him of this circumstance, and he at once endeavoured to obtain it for the National Collection. My friend, Mr. J. P. Earwaker, F.S.A., also, I believe, endeavoured to obtain it, but unsuccessfully ; for the altar is now in the possession of the Chester Archæological Society, at their Museum. By what means it came there, whether by purchase at Mr. Prescot's death (which occurred this year,) or by presentation, I know not, but as the Dean of Chester is about to read a paper on the subject to the Chester Archæological Society, I presume he will make known the reasons for its return to that city.

There is but one other fact to which I would call attention,

and that is the existence of a dock or basin, presumably of the Roman period, in the north of Lancashire. It seems to have been first noticed by Baines in his History of Lancashire, (edit. 1836,) Vol. IV., p. 570, where, under the head of "Warton," he says, "A small bay, between Lindeth and "Warton, receiving a rivulet from the eminences east of Silver- "dale is called Quicksand Pool, where in 1832 the remains "of a dock were discovered, which had been formed of large "quantities of timber and stone that covered about an acre "in space. The roots of trees are perceptible on the sands "at low water, between the mouths of the Keer and Quick- "sand Pool." And at p. 584 he says, "Carnforth is the "south-western township of the parish of Warton, and is "chiefly remarkable as the scene of a great aquatic depreda- "tion, several hundred acres of the salt marsh adjoining the "south bank of the Keer having been washed away within "the last century. One of the effects of the removal of the "alluvial soil has been to exhibit a kind of subterraneous "shipyard, in which large quantities of timber, some un- "wrought and others partly formed into vessels, have been "discovered."

This dock still exists. From the present appearance of the surrounding ground much information may be gained as to the original space covered by the sea at the time the dock was formed, though it is now grass land.

The dock is somewhat in the shape of an ordinary pie-dish, or oval with flattened ends. Its long diameter is about 200 yards, its short one about 100. The longest diameter is nearly due E. and W. At the S.E. corner there is a channel leading from it southwards to the river Keer, out of which channel again, on its eastern side, is another leading into what appears to have been an extensive roadstead for vessels waiting to come into the dock, but which is now a large field. The present average depth of the dock is from 30 to 40 feet.

Its bottom is covered with grass, interspersed with thorn and reeds. The channel leading from the dock was evidently of the same depth, though in portions of it the earth has since accumulated. About the middle of the north side of the dock there is some modern stonework surmounting a farm-yard drain. It is on the right-hand side of the road from Lancaster to Burton, and in the parish of Warton. The farm on which it is situated is called " Dock Acre Farm." A correspondent of the *Guardian* (London,) says of it, in November, 1873, that " the steps down to it were extant a few years ago, " and an anchor was found in it." It is now nearly two miles from the sea, but it is evident that at a remote period the sea has come up to it. The river Keer is also now a mere streamlet. The dock is only about three quarters of a mile from Borwick Hall, the ancient seat of the Bindloss's, and where Charles II, for a short time, found shelter, in August, 1650. It is to be hoped that some measures will be taken for its preservation. The Roman road from Lancaster to Natland must have passed within a short distance of it.

MEMORIAL OF THE LATE T. T. WILKINSON, F.R.A.S., OF BURNLEY.

By William Alexander Abram, Esq.

(Read November 11th, 1875.)

The cause of science and of historic research sustained a palpable loss by the death, in the early part of the present year, of Mr. Thomas Turner Wilkinson, of Burnley. Of the several learned societies to which Mr. Wilkinson was attached, none, perhaps, will more sensibly feel the effect of his removal than the Historic Society of Lancashire and Cheshire; for he held a place upon the Council at the date of his decease, a position well earned by several useful contributions to the Society's objects during a membership of twenty years. It was on the 30th November, 1854, that Mr. Wilkinson was elected a member; his first paper appeared in the volume of *Transactions* for 1857, and his last in the session of 1872. During the intermediate years, from 1858 to 1871, Mr. Wilkinson contributed papers at intervals;—in some cases two during one session. The members of this Society have consequently peculiar cause for experiencing the sense of deprivation occasioned by the death of one of the most industrious of its working antiquaries; and none will be likely to doubt the fitness of the insertion, at the request of the Council, of the following brief memorial of Mr. Wilkinson's life and literary work. The reason for asking the writer to prepare such an obituary notice will appear anon.

Thomas Turner Wilkinson was in the strictest sense a self-

developed man, a self-taught student. The son of a farmer, left motherless in childhood and paternally neglected, he had nothing but his own efforts to thank for whatever education he obtained before he reached adult years. The history of his youth, as told by himself in the autobiographical paper which I have to introduce, is a common story of toilsome struggle; to reach the level of knowledge which the sons of cultured fathers may arrive at without a conscious endeavour. But where the favoured of fortune ordinarily are content to rest, the self-instructed, inured to the habit of severe labour,—grown scornful of delights, and spurred to enterprise by the exigence of their position in the world,—are sometimes unwilling to desist from the pursuit of learning. By slow degrees Mr. Wilkinson made good his claim to the title of a successful student, and fitted himself to accept a post of responsibility as mathematical teacher in one of the old school foundations of his native district. This position he made the starting point of a fresh advance, on the road to eminence as a scholar and a teacher of science. Before his death, he had attained a good reputation in literature, and was esteemed among the learned, as possessed of extensive acquirements in certain branches of science.

Mathematics were the "first love" of Mr. Wilkinson as a student; as instruction in the various branches of the subject was his professional business for some years. And mathematical articles of his were first printed in 1837, in the *Ladies' and Gentlemen's Diary*, when he was about 22 years of age. In connection with this study, Mr. Wilkinson interested himself in the characters and writings of the Lancashire geometers. From his pen appeared, in several periodicals, memoirs of the following provincial English mathematicians:—John Butterworth, James Wolfenden, John Kay of Royton, Rev. John Lawson, William Crakelt, William Shepherd of Bradford, Dr. John Dalton of Manchester, J. H. Swale of Liverpool,

Henry Buckley, Isaac Rowbotom, and Jeremiah Horrox. His last mathematical essay, on "Problems in Contact," was read before this Society January 11th, 1872, and is printed in its *Transactions*.* Upon the quality of Mr. Wilkinson's mathematical writings, I am not able to pass a critical opinion; but there is reason to know that those writings had gained for him a more than provincial recognition as an accomplished geometer.

Mr. Wilkinson's taste for archæology and local history began to manifest itself somewhat later in life. I have heard him say that his acquaintance with the Rev. S. J. Allen, during that gentleman's residence in Burnley, was among the first influences that directed him to antiquarian investigation. Mr. Allen is known as having been the friend and amanuensis of Dr. T. D. Whitaker, author of the histories of Whalley, Craven, and Richmondshire; from whom he had himself derived the impulse towards the delightful study of antiquities, which he in turn imparted to Mr. Wilkinson. And it may not perhaps be deemed inapposite if I add, that Mr. William Angelo Waddington, of Burnley, and myself, as younger workers in the same field, are not reluctant to own the stimulus which the friendship with Mr. Wilkinson has given to our zeal for our prosecution of some branches of historical research. We may testify of our deceased mentor, that, like many of our ablest and most experienced county antiquaries, he was in no wise reluctant to communicate the results of his own sagacious inductions from facts laboriously collected, to such persons as he found earnestly bent upon following on in the same track of inquiry. His stores of knowledge were freely at the command of such as, by their sincere devotion to kindred aims, justified their claim to draw upon his treasury, replete as it was with "things new and old."

It is as a native Lancashire antiquary, however that the

* Vol. XXIV (2nd Series, xii), p. 25.

members of this Society are most directly interested in Mr. Wilkinson's life and literary work. And it will remain to the credit of the Society that its volumes of *Transactions* contain the larger proportion and the most notable of his contributions to local topography and archæology. These papers involved in their preparation a great deal of independent investigation; and collectively they may be said to add materially to the historical literature of Lancashire.

Other productions of our friend's industrious pen appear in the complete account of his writings comprised in the autobiography which he sent to the writer a few days before his death. In 1856 he published a "History of the Parochial "Church of Burnley," a small quarto volume of 120 pages, which contains much new matter; and generally his most extended and popular memoirs were produced within the last eight years of his life. The first of his books that may be placed in the category of general Lancashire literature, was an excellent volume on *The Folk Lore of Lancashire*, published in 1867; which has been out of print for some years; and a second edition of which the author was contemplating when death arrested his hand. His next considerable compilation for the press was a volume on the *Lancashire Legends, Traditions, Pageants, Sports*, &c., published in 1873. His friend, the late Mr. John Harland, of Manchester, had left at his death in 1868 a collection of local traditions, which it had been designed to unite with similar stores accumulated by Mr. Wilkinson, for publication under joint editorship; but Mr. Harland's death left entirely to Mr. Wilkinson the work of editing the materials. The names of both collectors, however, appear upon the title-page, and Mr. Wilkinson prefixed an appreciative memoir of his deceased coadjutor. For this work he also wrote down for the first time several of the lingering oral traditions of East Lancashire, and noted a variety of popular notions more or less peculiar to the

district. His last literary service was to edit and extend a second edition of *Ballads and Songs of Lancashire*, the first edition of which was prepared by Mr. Harland. This volume of Lancashire verse appeared but a very few days before its editor was removed from this world, and it contains a little piece by Mr. Wilkinson himself, entitled "The Old Man's "Reverie," which (if not much in the way of poetry) has, under the circumstance of its composition, a certain pathos in its personal reference to the widowed situation of the writer, and his fondness for his little grandsons, the children of his widowed daughter.

It was while writing the memoir of his friend Harland for the volume of Lancashire Legends, that Mr. Wilkinson—being thereby made familiar with the difficulty often found in procuring trustworthy particulars of the early history of men of humble birth, and who have made themselves a name in literature,—was led to draw up a concise narrative of the principal incidents of his own life, that might serve to acquaint his friends with the facts of his career after it had closed, and to prevent misstatement in any literary record. This auto-biographical sketch he gave to me a few months before his death, with the express request that, after his decease, I should make such use of it, in the way of publication, as should appear appropriate. I had the MS. transcribed, and I have strictly reserved its contents for publication in the pages of this Society's *Transactions*, in the anticipation—which was speedily fulfilled—that the Council would desire such a memorial to be printed. This exact and authentic account from our friend's own pen, brought down, as it chanced, to the last year of his life, quite dispenses with the need for biographic details by myself or any other. The story of his history is a "plain, unvarnished tale" of prolonged plodding, study, and endeavour by one who, in a contracted circle, was unwearied

in intellectual pursuits, and who at last found his efforts crowned by increased usefulness and extended respect.

I was born on the 17th of March, 1815, at Abbot House, or Mellor Hall. My parents' names were William Wilkinson and Mary Turner; hence my own name Thomas Turner Wilkinson, the second of which I adopted in honour of my mother, who died when I was about a year and ten months old.

After her death, my brother John and I were sent to live with my grandfather and grandmother, John and Elizabeth Turner, who then farmed Oxendale Hall estate, in Osbaldeston, formerly a seat of a branch of the knightly family of Osbaldeston. We remained there under the special charge of my aunt Ann, until my father married again, when I returned to Abbot House, Mellor, near Blackburn, but my brother was adopted by my aunt, and remained with her until his marriage.

When I was about seven years of age, I was sent to a school kept by a cousin named John West, who afterwards became a Manchester merchant, and amassed considerable wealth. I remained at his school for several years, and was soon noted as an excellent reader and a good arithmetician. My friends used to give me sixpences for reading to them some of the most difficult chapters they could find in the Old Testament and other books.

When I was about twelve years of age, I was taken from school in order to assist in the farm labours; and for some three or four years I neglected to continue my studies. On one occasion my brother paid me a visit and astonished me by his ability to work difficult questions in Arithmetic. I saw my own deficiency and determined to outdo him. My uncle, John Wilkinson, who was then in medical practice at Mellor, encouraged me, so I soon mastered Reynolds's *Arithmetic*, then Crosby's *Walkinghame*, and afterwards the more difficult one by Charles Vyse.

My father cared little about my improvement, and my stepmother less; but my uncle encouraged me all he could. He had a good library of books, medical and others; and I had full access to them whenever I had occasion. Exley's *Encyclopædia*, I remember, was a treasure, and helped me out of many a difficulty. I thus obtained a good general knowledge of diseases and their remedies, which has proved of much use to me in after life.

I then procured Pinnock's *Catechisms of Algebra*, and soon found I could comprehend this subject without a master, for I

had now got beyond both my old teacher and my uncle. These were soon mastered, and I then entered upon Bonnycastle's *Algebra* and found it not too difficult. My uncle next procured for me Malton's *Royal Road to Geometry*, and I was soon engaged in that delightful study, which has ever since been a favourite one. I had already gone through Bonnycastle's *Mensuration*.

About the year 1830 there were resident in Mellor a number of youths who were anxious for intellectual advancement, and we formed a Mutual Improvement Society, which met once a week at the homes of the members in rotation. On these occasions I had one of the spare rooms at Abbot House fitted up with a table and seats; and we used to study certain subjects, and discuss the knotty points which presented themselves, when we met. I derived much benefit from these meetings. We also clubbed our pence together, and formed a small library of books for general reference.

By this time I had become known to several good mathematicians, of the old school, in the neighbourhood of Blackburn and Preston—Mr. John Mitchell, of Pleasington School; Mr. William Harwood, and Mr. George Aspden, of Mellor; Mr. John Huntington, of Preston, and several others. These had occasional meetings at Mr. Mitchell's house; and as they were all men of mature years, I looked upon it as a great privilege to be permitted to join them. I well recollect a Mr. Brewer, of Preston, explaining some wheel-work to us, which he required for an orrery; and this stimulated my desire to become acquainted with Astronomy.

In 1833 I began to study Trigonometry with Mr. George Aspden, and went to his house once a fortnight for that purpose. Wright's *Introduction* to that subject was soon finished, and I then went on to Bonnycastle's and Keith's more extended treatises. He also gave me assistance in some of the more difficult portions of Algebra, and wrote out for me six questions, at each visit, from the one hundred given at the end of Hill's *Arithmetic*. I well remember finding this too slow; and after I had solved about five sets of six questions, I requested him to lend me the book. He did so, and I took him solutions to the remaining seventy questions on my next visit. His astonished look, when he had examined my papers, I shall never forget.

About the year 1835, I became a private pupil of the Rev. William Hartley, incumbent of Balderstone, and improved myself in several subjects under his care. We were on terms of intimacy until his death; and on one occasion his old pupils presented him with a testimonial and an address, in token of our respect and in recognition of his services. I had then

become a Fellow of the Royal Astronomical Society, and he valued this as much as if the honour had been conferred on himself.

I also remember that Mr. Charles Tiplady, bookseller, Blackburn, had procured a copy of Bland's *Hydrostatics* for a customer, who never called for the work. After a time he placed it in his window for sale, and I became the purchaser. A new field of inquiry was thus opened to me, and I read the treatise with avidity. I also began to take in the Treatises issued by the Society for the Diffusion of Useful Knowledge, and found them to contain much information on subjects in which I felt a warm interest.

The appearance of Halley's Comet, in 1835, much increased my desire to become better acquainted with Astronomy, and I then read, and re-read, Ferguson's, Bonnycastle's, and Gregory's treatises, with much care. At a later period I found Maddy's *Astronomy* of much use for calculations.

In this year, through the good offices of the Rev. William Hartley and Mr. Henry Collinson, an arrangement was made by which I went into the counting-house of Messrs. William and John Statter, cotton spinners, Mellor Brook, and an agreement stated that I should enter the firm, on certain conditions, after a service of seven years. This introduced me to cotton-spinning calculations, at which I was soon an adept. At one time I had calculated every speed and draught in the mill from the fly-wheel to the spindles. My services were also required by other firms when difficulties arose. However, the Messrs. Statter became bankrupts, in 1837-8, and thus my cotton-spinning hopes were blighted.

At this time I was well acquainted with the Rev. Francis Kirkpatrick, incumbent of St. Mary's Church, Mellor. I had written for his choir some Christmas hymns, which are probably still to be found in the old MS. books belonging to the musicians of that neighbourhood; and I had also ridiculed the singing of a neighbouring choir in some humorous rhymes, which made a great noise along the country side. I had, besides, taught in Sunday schools both at Mellor and Mellor Brook; and hence, when the Rev. Samuel Loscombe Allen, second master of the Burnley Grammar School, went out to India as a missionary, I was recommended, by Mr. Kirkpatrick and the Rev. W. Hartley, as a proper person to succeed him. I accordingly waited upon the head master, the Rev. Samuel James Allen, M.A., and was at once appointed.

The head master proved to me a valuable friend; for he not only assisted me in rubbing up my Latin, but also lent me such

books as I required. It was he who revived my taste for local antiquities, which had been ingrained from my residence at two of the ancient mansions of Ribblesdale. When a boy, too, I had many times visited Samlesbury, Balderstone, Sunderland, Hothersal, Osbaldeston, Ribchester, Stydd, and Stonyhurst; so that the embers needed only the fan to woo them into flame. In my early days I had heard all the old stories, legends, and folklore of the district; and hence the loan of Whitaker's *Whalley* from Mr. Allen was just what was needed. I read this work, much enriched by Mr. Allen's notes, and have ever since had the desire to become an antiquary.

On Mr. Allen's promotion to the vicarage of Easingwold, I went to Crawshaw Booth, and opened the National School there in February, 1839, under the superintendence of the Rev. Ebenezer Allen, a brother of the late head master. I transferred that school to my brother in 1840; and in October of that year I opened the National School at Sandy Gate, Burnley, where I continued for two years; and then resumed my assistant mastership at the Grammar School in 1842, on the appointment of the Rev. James Butler as head master. In 1845 I retired from this position, and opened a school on my own account at Mount Pleasant, Burnley. I remained here until 1857, when, on the solicitation of Richard Sutcliffe, Esq., and others, I went back to my old situation at the Grammar School, where I remained until December, 1871, and then finally ceased to be a teacher.

Before I was twenty years of age I had read most of our best poets. Milton's *Paradise Lost*, Pope's *Homer*, and Dryden's *Virgil* were amongst the number; but those I most admired were Pope's *Dunciad*, his general poetical compositions, and his *Essay on Man*. I committed a considerable portion of Kirke White's *Remains* to memory, and admired his letters. At one time I could recite many of Burns's poems and songs, and especially valued his "Tam o' Shanter," &c. I also read the *Spectator*, the *Tatler*, the *Guardian*, &c., with much interest; and was so much taken up with Johnson's *Rambler* that I was vain enough to attempt compositions of my own, and compared them with similar essays in that noted serial! This practice, however presumptuous it may appear, gave me a facility of composition which proved of great value. Hume and Smollet's *History of England* was the first I remember reading, although Goldsmith's small work had been used at school. In Grammar I had Lindley Murray, Sutcliffe, and Lennie; the last-named work was my favourite, and at one time I had committed to memory—though Grammar is a matter of judgment—every definition and rule in the work.

On visiting Liverpool in 1839 I bought Bridge's *Mechanics*, which I read with much interest; and this was followed up with Professor Young's elegant work, and the more extended treatise by Dr. Olinthus Gregory. I found Young's work so much to my taste, that I studied his works on the Differential and Integral Calculus in preference to any others. I had previously examined Dr. Hutton's general *Course of Mathematics*, and had made much use of Gardiner's edition of Sherwin's *Logarithms*, and also Dr. Hutton's *Tables*.

In 1837 I sent my first contribution to the *Lady's Diary*, in the shape of a poetical enigma on a "Shuttle." It was printed in the *Diary* for 1838, and I continued to contribute poetry, philosophical essays, and mathematical problems to that work until its discontinuance in 1871. I gained the mathematical prize for answering the prize question in 1852; and many of my solutions are printed in the successive numbers of that work. Several of my mathematical essays may also be found in the Appendices. W. S. B. Woolhouse, F.R.A.S., was the editor.

In 1838 or 1839 I found that the *York Courant* newspaper included philosophical queries and mathematical questions. This column was then edited by Thomas Tate, F.R.A.S., afterwards mathematical master in Battersea college; and on his leaving York for that place, the mathematical column was placed under the care of my friend William Tomlinson, F.R.A.S., then of Archbishop Holgate's Grammar School, and afterwards of St. Peter's College, York. That work contains several answers to queries from myself, and many mathematical solutions both of my own and of several of my pupils. I continued to be a contributor until the mathematics were discontinued as being deemed unfit for the columns of a newspaper.

When the *Northumbrian Mirror* was established, I became a correspondent to the work, and contributed several mathematical solutions to its pages. The *Preston Chronicle* also began to publish mathematical questions, and I sent a few to its pages. Septimus Tebay, B.A., was the editor.

In 1845-50 the *Mathematician* was established and issued at Woolwich. I had then become acquainted with Professor Davies, one of the editors, and hence several of my mathematical solutions are contained in successive numbers of that work. There are three volumes of the Professor's letters to me amongst my manuscripts. On the Professor's death, his widow presented me with his copy of Leybourn's *Mathematical Repository*, as a memento of my valued friend.

When the *Educational Times* was established, I was one of its earliest promoters, and had the principal share in introducing

the mathematical department into that journal. This portion was at first edited by Richard Wilson, D.D., author of an excellent treatise on Trigonometry, and it is now (1873) under the care of W. J. C. Miller, B.A., of Huddersfield college. This work contains very many mathematical questions and solutions, which I have contributed at different times. I also gained the two mathematical prizes which were offered by the proprietors for the best solutions to certain questions. Already more than 4000 questions have been proposed and answered in this work. A lengthy paper on Porisms, from me, will be found in this journal.

I also contributed a few questions and solutions to the *English Journal of Education*, when Mr. William Godward was mathematical editor.

Some of my earliest poetical contributions may be found in the pages of the *Blackburn Standard* newspaper; and the late Mr. Walkden engaged me as his news correspondent at Burnley for some years. I soon tired of journalism, for I found that the *more* truth I told, the *less* I pleased those concerned; besides, the politics of the paper did not agree with my own convictions.

In 1822 the Blackburn group of mathematicians established a bi-yearly journal, entitled *The Student's Companion*, a Literary, Mathematical, and Philosophical Miscellany. It was published by Mr. Thomas Rogerson, Market Place, Blackburn, but it was discontinued after two numbers were issued. I knew most of the contributors, in after years, personally; and their writings interested me when I began to take an active part in such contributions. Charles Holt was then schoolmaster at Hoghton; and acted as principal editor. In my copy of this serial, I made notes respecting some of the contributors, which are worth transcribing. George Aspden was my old tutor; he afterwards became master of the National School at Padiham. J. Blakey afterwards became a schoolmaster at Blackburn; William Sefton became a cotton manufacturer; William Harwood was a weaver at Mellor, and taught himself to read after he was 22 years of age. He was a fair mathematician. William Charnley, afterwards schoolmaster at Darwen; John Ward, subsequently master of Pleasington School, in succession to John Mitchell, senior, and John Mitchell, junior; Benjamin Fielding became a land surveyor at Darwen, and committed suicide by hanging. "Vulcan" was John Dewhurst, a worthy blacksmith in Northgate, Blackburn; Henry Lightbown was the master of a private school in Ainsworth Street, and was part editor of the *Student's Companion;* he was a good mathematician, and wrote much in the *Mathematical Companion* and the *Diaries*. John Brierley was a farmer and schoolmaster at

Brindle; he was fond of the Diophantine Analysis, but was most eccentric in his manners. John Huntington kept a private academy in Trinity School, Preston; he was an able correspondent to the mathematical periodicals, especially the *Diary*. B. Derham was an officer of Excise at Blackburn; B. Longwith is "Lightbown;" and "J. M. P." represents John Mitchell of Pleasington, then one of the most successful schoolmasters in this division of the county. Timothy Pearson became a manufacturer and farmer at Hoghton; he was a distant relative of my own by the grandmother's side. To this group, at a later period, must be added the names of John Garstang, for a long time assistant master of the Blackburn Grammar School; then master of Paradise Academy; and now actuary of the Blackburn Savings' Bank. He is a good mathematician; wrote to the *York Courant*, the *Diary*, &c.; and taught the Rev. Robert Harley, F.R.S., &c., now one of the leading mathematicians of the day. Richard Eaves, formerly book-keeper at Brook House Mills, and latterly of the Rate Offices, Blackburn; was also a good mathematician, and gained a prize in the *Diary*. My own name must now be appended; for these were my personal friends in youth, and we have enjoyed much scientific intercourse with each other. Septimus Tebay, B.A., then of Preston, but latterly head master of Rivington School, occasionally joined us at Blackburn, when we met at Mr. Garstang's; he is one of the ablest of our Lancashire mathematicians, and has gained many prizes in the *Diary*. He is also the author of an excellent treatise on Mensuration.

In 1846 I contributed some mathematical exercises, &c., to the *Mechanics' Magazine*. These brought me into correspondence with Professor Davies, Professor De Morgan, Sir James Cockle, and others. I purchased my first mathematical periodical, the *Lady's Diary*, in 1835, and the contents of this so interested me that I began to collect all the English periodicals which contained mathematics. In process of time I had in my possession the most extensive series of these works out of London. I made these an object of special study, and at the suggestion of Professor Davies I commenced a series of articles on our English Mathematical Periodicals in the *Mechanics' Magazine* during 1848, which extended through various volumes of that work up to 1854. I think about 28 of these works are there summarized and described. I afterwards followed them up to another series, entitled *Notæ Mathematicæ*, which extended to about twelve papers. I also contributed many other short essays to this Journal, including articles on "Transversals," "Horner's Synthetic Division," "Impossible Equations," &c. Biographies of Butterworth, Wolfenden, and Kay, may also be found in the same serial.

These essays were much valued, and led to my being elected a Fellow of the Royal Astronomical Society, in December, 1850. The Rev. J. W. Whitaker, D.D., Vicar of Blackburn, certified my fitness for the honour from "personal knowledge," and his nomination was backed by Professors Davies, De Morgan, Dr. Rutherford, W. S. B. Wheelhouse, and others. Soon after, the Manchester Literary and Philosophical Society elected me a corresponding member; and I was also enrolled a member of the Lancashire and Cheshire Historic Society, on the recommendation of Dr. Hume and others.

When Professor Davies died, in 1851, he left a series of papers unfinished in the *Philosophical Magazine*, on "Geometry and "Geometers." I added two papers to complete the series; and also wrote an Essay on English Mathematical Literature for the *Westminster Review*, which was printed in the number for April, 1851. The writings of Professor Davies are here specially dwelt upon.

When the publication called *Notes and Queries* was established, I was requested to become a contributor by Professor Davies and Mr. Thoms. I accordingly contributed a paper on the "Study of Geometry in Lancashire," and my "notes" occur at intervals from the *first* to the end of the *fourth* series of that journal.

To the Manchester *Memoirs* I contributed an essay on the "Lancashire Geometers and their Writings;" a "Memoir of "the Rev. John Lawson, B.D.;" "The Life and Writings of "Dr. John Dalton;" and many minor papers. A very extended notice of the contents of the *Lady's Diary* will also be found in the pages of the *Educational Times*; and I also reprinted some of the notices on Mathematical Periodicals in the *Irish Teachers' Journal*, to which I sent several mathematical questions and solutions. I also gave a series of such questions in the first two volumes of *The Key*, the mathematical portion being edited by my friend, Mr. J. W. C. Miller.

At an early period of my studies I found it necessary to consult the leading French authors on Geometry. I therefore placed myself under the tuition of M. Hallen, and soon became able to read, write, and translate French with tolerable ease. This led to my adding the works of Monge, Hatchette, Lacroix, Laplace, Carnot, Poncelet, Chasles, &c., to my library. I also procured Hatchette's *Correspondence*, Gergonne's *Annales*, Quetelet's *Correspondence*, Terquem's *Nouvelles Annales des Mathematiques*, to which last-named work I contributed several mathematical scraps. The results of this French leaven will be seen in many of my later papers.

My being located in the centre of the Burnley coal field, drew my attention to the Geology of the district. In conjunction with my friend, Mr. Hull, I drew up a description of the Burnley Coalfield, which I read before the British Association, at Manchester, in 1861. The Manchester Geological Society elected me a member, and I contributed several papers on "Drift Deposits," &c., to the *Transactions* of that Society.

I also published a paper "On the Geology of East Lancashire," in *Country Words*, Manchester, 1866; and two chapters on "Astrology," past and present, in the same short-lived journal.

In 1858 I sent an account of the Eclipse of the Sun, March 18th, as seen at Burnley, which is printed in the Monthly Notices of the Astronomical Society; and in 1859, when Mr. Whatton published his *Life of Horrox*, and a translation of the *Venus in Sole Visa*, I reviewed the work at great length in the *Preston Chronicle* newspaper. This may be seen in volume II of my collected papers.

A series of papers on "The Folklore of Philosphers"; "Derbyshire Mathematicians"; "Sacheverel Riots in Lancashire"; &c., may be seen in different volumes of the *Reliquary*. In several of these I used some MS. left by my esteemed friend, John Harland, F.S.A.

A reference to Dobson's *Rambles by the Ribble*, Harland's *Lancashire Ballads*, and the new edition of Baines' *Lancashire*, by Messrs. Harland and Herford, will shew that I assisted a little in those works;—but the same may be said to a much larger extent as to the new edition of Dr. Whitaker's *History of Whalley*, edited by the late John Gough Nichols, F.S.A., to whom I sent all my local collections relating to the Parish of Whalley. All the early Roman and Saxon portions of the work were revised, and the Burnley section was almost re-written, by myself. We had arrived at the sheet commencing "Gawthorpe" at the time of Mr. Nichols's unexpected death.

My love for antiquities was never latent for any long period; hence I contributed occasional papers on our local antiquities to the Burnley *Advertiser* and *Gazette*. These were on "The Civil Wars as relating to East Lancashire"; "The Fight near Padiham"; "The Chantries at Burnley, Holme, Padiham," &c.; "The Witches of Pendle Forest"; "Burnley in the Olden Time"; "A noted Burnley Incumbent"; &c. At a later period I sketched our "Ancient Mansions and their Owners" in four lectures:—two have been printed, and two remain in MS. I also gave a sketch of a visit to some "Ancient Mansions in Blackburnshire," which was printed in the *Blackburn Times* by my friend Mr. Abram.

When the Manchester Literary Club formed a Committee for issuing a Glossary of the Lancashire Dialect, I was included amongst the number; and have supplied meanings, derivations, and uses of all our dialect words up to the end of the letter E (1873).

In 1856 I published a *History of the Parochial Church of Burnley*, which has been much quoted by Canon Raines, and others.

Owing to my connection with the Lancashire and Cheshire Historic Society, I was led to contribute many papers to their *Transactions*. There are three on "Lancashire Customs," &c.; one on the "Battle of Brunanburh"; others on "Geometrical Analysis"; "Liverpool Mathematicians"; "Biographies of Swale, Buckley," &c.; "Spenser and the East Lancashire Dialect"; "On Songs and Ballads current in Lancashire"; "On Fossil Trees found at Burnley"; "The Burnley Coal-field"; "Problems on Contact of Circles," &c. Some of these have been highly spoken of by those best able to judge.

My contributions to *Notes and Queries* on our local Folklore, and the paper on "Lancashire Customs," previously alluded to, led my excellent friend, John Harland, to propose that we should issue a joint volume on "Lancashire Folklore." This was issued in 1867, and a large edition was soon sold off. At Mr. Harland's death, we had collected materials towards a second volume; and these scraps were given into my hands by his literary executor, the Rev. Brook Herford. I set to work and finished a volume of "Lancashire Legends," &c., which was issued to the public on March 12th, 1873; by March 30th, the work was "out of print," 1750 copies having been sold.

I may now add a note or two on my connection with the public affairs of Burnley. In 1847 I was elected one of the "Improvement Commissioners," who then had the government of Burnley under an Improvement Act. Soon after my election I was put on the Finance Committee, and, in a short time, made chairman. I continued a Commissioner until 1861, when Burnley was incorporated. At the first election of Town Councillors I was second on the poll; and was chosen Alderman by my fellow town councillors. I was re-elected in 1862, and in 1868, and remain Chairman of the Finance Committee. On my leaving the Grammar School, in December, 1871, I was not well used by the head master; but on his resignation the school was closed during the erection of the new buildings. In 1873 I was elected one of the Trustees.

I have been twice married: in 1837 to Agnes Ward, of Preston; again, in 1840, to Angelina Harrison, of Burnley,

whose great-grandfather was Vicar of Gisburn for over forty years. His son Valentine was captain in the Royal Navy, and his descendants still reside in the neighbourhood of Portsmouth. The Vicar was closely related, by marriage, to the first Lord Ribblesdale.

I have one son and two daughters living; the former an architect and surveyor.

Our family traditions are, that my family is descended from a younger son of the Wilkinsons of Durham; that my great grandfather commenced grazing and farming in N.W. Yorkshire; then removed to Eccleshill, Cabin End, and Knusden near Blackburn. My grandfather at one time farmed the two latter; and then removed to Abbot House in Mellor, where I was born. My father succeeded him. Our motto is said to be, *Nec rege, nec populo, sed utroque;* to which sentiment I have no objection.

A few sentences will suffice to complete the record from the point at which it was left by the deceased. He was in fairly good health when these remarks were penned, sometime towards the close of 1873. But the term of his life was nearer a finish than he could have supposed, when he made this provision against the last contingency. On the 13th of April, 1874, he sustained a terrible blow. His wife died without so much as a minute's warning, during his absence from the house, and the inconsiderate manner in which the intelligence was communicated to the affectionate husband, greatly added to the crushing effect of the sudden stroke. The day after, he wrote me:—"We are overwhelmed with grief "at our house to-day. My dear wife died yesterday in an "instant, while sitting at dinner. I was not at home, and "she died in the arms of her eldest daughter. Excuse more "from your afflicted friend." He was himself soon after stricken with serious illness, and for several months lay prostrate under successive attacks, recovery from which was retarded by the mental distress that had brought it on. Eventually he was somewhat better, and between the great trouble of April, 1874, and his own death, about nine months later, he

passed through the press nearly 600 pages of the new edition of the *Lancashire Ballads*,—working steadily by sheer force of literary habit, in spite of excessive weakness and pain. November 8th he wrote:—"I have sent in all the copy of "the Ballads for the printer. . . . My health is still "very precarious—in fact, varies as the weather. I doubt if "I shall ever fully recover;" and spoke of his disease as of a kind "not easily removed." Wednesday, January 13th, he spent in Blackburn. He was tolerably cheery in spirits, and sat to a photographer for a successful portrait.

It may be proper to insert here—

THE OLD MAN'S REVERIE.

An old man sat on the low porch seat,
And he grieved for his help-meet gone;
Then his grandsons nestled around his feet,
And a smile on his pale face shone.

The west wind wafted its balmiest breeze,
And the brooklet babbled hard by;
The sun lit up the quivering trees,
As he sank in the western sky.

Then the old man mused on days of yore,
Of the time when his cares were light,
When merry feet danced the greensward o'er,
And his every hope was bright.

The thoughts of youth and his manhood's pride
As the fitful breeze passed on,
Till they circled round a faithful bride,
By his worth and affection won.

The clouds now passed o'er the sun's bright face,
And they shadowed each hill and dale;
'Twas an emblem just of the old man's race,
As he pressed through his life's rough vale.

Then to one dark spot his thoughts now turned—
When the battle was well nigh won—
He closed his eyes, which the salt tears burned,
As he whispered, "Thy will be done."

Tow'rds the future next his musings bent,
And a smile o'er his calm face passed:
Faith saw the crown of a life well spent,
For the haven was reached at last.

Then the children clasped their grandsire's knees;
But the world had vanished from sight;
And soft winds sped through the bending trees,
As they murmured his last "Good night."

One more note the writer had from him, and a few days later his daughter wrote that he was very ill. He now sunk rapidly, and died on the morning of Saturday, February 6th, 1875. An associate, Mr. W. A. Waddington, of Burnley, wrote on that day:—"I know how grieved you will be to "hear of the death of Mr. Wilkinson. He died this morning. "His loss will be very much felt indeed, and no one will "appreciate more than yourself his real worth. Like myself, "you will feel you have lost a warm and generous friend; "for, notwithstanding the disparity in years, he has ever been "most kind and helpful."

In Burnley the death of Mr. Wilkinson was universally felt to be a public loss. His remains were buried at Holy Trinity Church, on Wednesday, February 10th. The funeral was a public one, and in the procession were the Mayor of Burnley, and most of the members of the Town Council; the Head Master of the Grammar School, and a number of the Scholars; with representatives of this Society, the Manchester learned societies, and several local literary institutions. Many personal friends of the deceased joined in the last tribute to the worth of one of the ablest, most industrious, and most useful among the authors and scientific men this part of the country has produced.

ROMAN LANCASTER.

By W. Thompson Watkin, Esq.

(Read January 13th, 1876.)

Like many other cities boasting of a high antiquity, the early history of Lancaster is almost totally unknown. That it existed as a British town before the Roman invasion is probable, from the occasional discovery of celts, flint arrow heads, &c., in the soil on which it stands. Of its having been a Roman station there is fortunately no doubt whatever. The frequent discovery of inscribed Roman altars, tombstones, &c., as well as coins, Samian ware, and other pottery—and the occurrence of large foundations of buildings, walls, and baths, prove it to have been long occupied by a Roman garrison and civil population. This is confirmed by its etymology. Of the date of the erection of the *castrum* we are however in ignorance, but it is certain that it existed at a comparatively early period of the Roman dominion, from the fact of a *miliarium* or milestone of the Emperor Hadrian, dated A.D. 120, having been found within a few miles of it, on the line of Roman road connecting it with the Roman station at Overborough.

Of its Roman name we are, for the present, still ignorant; but our ignorance may at any moment be removed by further discoveries of Roman inscriptions at or near the site. Various are the names which have been given to it. Camden, Horsley, and Rauthmel considered it the *Longovicus* or *Longovicum* of the *Notitia*. Reynolds considered it was the *Bremetonacae* of the Tenth Iter of Antoninus. The late Mr. Just considered

it was the *Bremetenacum* of the *Notitia,* which he apparently thinks was the same as the *Bremetonacae* of Antoninus. Dr. Stukeley in his "Account of Richard of Cirencester," p. 53, thinks it was *Ad Alauna;* and in this he is supported by Mr. Whitaker in his *History of Manchester;* who considers it was both the *Ad Alauna* of Richard, and the *Longovicus* of the *Notitia.* The recent complete exposure of the Itinerary of Richard, and its now almost general acceptance as a forgery only, disposes of the claims of Lancaster to the name of *Ad Alauna,* for though there are six places bearing this name to be found in the Chorography of Ravennas as being in Roman Britain, none of them appear to be near the site of Lancaster. Of the other names I certainly prefer *Longovicus,* as having the strongest claim, though I am by no means satisfied with it. The time has not yet arrived when we can speak with certainty.

Of the composition of the garrison of Lancaster we have fortunately better proofs. It appears to have been a cavalry station. At one time, probably for many years, it was occupied by the 2nd Ala of the Gauls, which bore the title of Sebosian or Sebusian—(ALA II GALLORVM SEBOSIANA.) This is arrived at from the discovery of an inscription recording the restoration of a Bath and Basilica, in the reign probably of Caracalla, A.D. 212 to 217, or that of Elagabulus, A.D. 218 to 222, which was found in a garden near the top of Church Street; and also by the discovery of a brick- or tile-kiln at Quernmore, near the town, many of the tiles being inscribed. These latter bore the words ALE SEBUSIA.

From the Malpas *tabula* of the Emperor Trajan we find that the full names of this regiment were, as I have above stated, ALA II GALLORVM SEBOSIANA, and that it was in Britain as early as A.D. 104. That it was not, however, stationed at Lancaster during the whole of its stay in Britain we have proof, from the fact of a large and handsome

altar, to the god Silvanus, having been erected by Caius Tetius Veturius Micianus, one of its prefects, on Bollihope Common, near Stanhope in Weardale (Co. Durham), and now preserved at Stanhope rectory. On this, he is called PRAEF. ALAE SEBOSIANAE, which shews that in inscriptions relating to the regiment, the words II GALLORVM were not always used. Again, from a broken tombstone found in Cheapside, (then Pudding Lane) in 1772, and now lost, we gather from some remaining letters that another cavalry regiment, probably the ALA AVGVSTA, which at one time was stationed at Old Carlisle, or the ALA AVGVSTA VOCONTIORVM, of which we find traces at Eildon in Scotland, and at York, was stationed here.

Another peculiarity of this station is, that it *does not appear* (for excavations can only determine the point with certainty) to be built upon the usual Roman plan of a square or parallelogram, but approaches to a heptagonal shape. It is situated on a small hill overlooking the river Lune, which is here navigable for vessels of a considerable size. From small portions of the walls remaining, and their foundations being visible in other places, they seem to have been six feet thick. They appear to have suffered greatly, after the departure of the Roman garrison, from the attacks of Scots and Danes, and from intestinal wars during the Saxon period, so that at the time of the Norman Conquest they were virtually ruinous. The Conqueror bestowed the site upon Roger de Poictou, who immediately afterwards erected the castle, utilising for that purpose some of the Roman towers and portions of the walls. At the same time he erected a priory, in the charter of which he says that, "dedit Deo et Sancto Martino "ecclesiam Sanctae Mariae de Lanecastro cum omnibus ad "eam pertinentibus, et partem terrae illius villae *à veteri* "muro," &c. This shews that, even at that early period, the remains of the Roman fortress were called "The Old Wall."

That both town and *castrum* were reduced to a miserable condition at this time seems evident from the Domesday survey, where Lancaster appears to be divided into two vills, which, with twenty others (twenty-two in all) are noticed as belonging to Halton. These vills belonged to the Saxon Earl Tosti, and the Norman survey specifies the number of carucates in each. The portion referring to Lancaster itself says that in "Loncastre" there were six carucates, and in "Cherca-"loncastre," which seems to mean "Church by Lancaster," two carucates of land to be taxed.

The frequent incursions of the Scots during the middle ages caused the walls of the castle several times to suffer severely, so that much of what remained of the Roman work was doubtless still further destroyed, and at the same time those portions of the Roman walls which had not been incorporated with the castle fared similarly; so far indeed that Leland, in the time of Henry VIII, took the latter for part of the wall of the priory. He adds:—"Some have thereby "supposid that it was a peace of the waulle of the towne. "But yndeade I espyed in noe place that the towne was ever "wallid."* He could not find, he says, any trace of what he considered Roman stonework above ground, "but in those "partes in the fieldes and fundations hath been found moche "Romayne coyne."

All that Camden says in his *Britannia* concerning Roman Lancaster, with the exception of telling us that Roman coins were sometimes found, is:—

> Below this (the church) at the beautiful bridge over the Lone, on the steep of the hill, hangs a piece of very old wall, of Roman work, called "Wery Wall," from the later British name of this town as it should seem.†

The next writer on the subject was Dr. Stukeley, who

* Leland, *Itin.* Vol. V, p. 93.

† Gough's *Camden*, edit. 1789. Vol. III, p. 131.

visited Lancaster about 150 years ago, and who in his *Itinerarium Curiosum*, vol. II, p. 38, says :—

I found a great piece of the wall, made of the white stone of the country, and very hard mortar and still very thick, though the facing on both sides has been peeled off for the sake of the square stones which they used in building. A year or two ago a great parcel of it was destroyed with much labour. This reached quite to the Bridge Lane, and hung over the street, at the head of the precipice, in a dreadful manner; it went round the verge of the close north of the church, and took in the whole circuit of the hill, and the ditch on the north side of it is now to be seen. I suppose it enclosed the whole top of the hill where the church and castle stand.

Mr. West in his *Guide to the Lakes*, published in 1799, says at p. 17 :—

On the north side of the hill below the churchyard are some remains of the wall that encompassed the station. It retains part of the ancient name of the place, being called Wery-wall. Those who suppose it to be that part of the priory inclosure wall, which was situated on the north side of the churchyard, may be satisfied it is not so by viewing the part of the inclosure wall yet standing, which is a thin mouldering fabric; whereas the Wery-wall is a cemented mass that nothing but great violence can injure. Another fragment of it stands at the stile on the foot-path, under the west end of the churchyard. [This was soon afterwards destroyed.] The father of the late William Bradshaw, Esq., of Halton, remembered the Wery-wall projecting over Bridge Lane and pointing directly to the river. . . . At Bridge Lane this wall makes an angle, and runs along the brow of the hill behind the houses, in a line to Church Street, which it crosses about Covell-cross. This is attested by the owners of the gardens, who have met with it in that direction, and always found blue clay under the foundation stones.

These old writers derive the name of "Wery Wall" from an assumption that the British name of Lancaster was *Caer Weridd*, a name which originated with Camden, and for which I cannot see the shadow of a foundation.

The last writer on "Roman Lancaster" is the Rev. Robert Simpson, M.A., who, in his *History of Lancaster*, (1852), p. 124, says :—

The field immediately below the churchyard of St. Mary, and between it and the river, retains the appearance of a Roman fortification, a double vallum, and only a few years since a portion of the wall which had surrounded it was visible in the path that leads from the church to the quay; and another part, under the north wall of the summer house in the garden of Mr. Willan, still exists. The portions which projected into Bridge Lane have been removed, but in a garden on the declivity of the hill to the north, and behind houses leading to the quay, some slight remains of the wall may still be seen. From these specimens it appears to have been a strongly-cemented mass, six feet in thickness, bearing the precise character of the remains of the Roman castle of Manchester.

These fragments of wall still (1875) exist. From what is above ground it is impossible to say whether any bonding tiles have been used in their construction, the facing stones being almost entirely gone. The tracks of several of the streets are still visible in the Vicarage fields, where the ground does not appear to have been disturbed; but on this head I cannot speak with certainty. It would, however, no doubt richly reward any one attempting an exploration. The vicarage is built on the very edge of the *castrum*, and in digging its foundations, some years ago, great numbers of coins were found. They consisted chiefly of the reigns of Claudius, Vespasian, Domitian, Trajan, Hadrian, Antoninus Pius, and Marcus Aurelius.

Coming now to the antiquities of the Roman period found at Lancaster, the first mention we have of anything being discovered there is in Dr. Leigh's *Natural History of Lancashire, Cheshire, and Derbyshire,*" &c., (Oxford, 1780), in Book III of which, at p. 10, he says :—

At Lancaster lately, in digging up of a cellar of Mr. Partington, were found several Roman *Disci* and *Sympuvia* (?) or cups used in sacrifices, and coins, some of *Aelius*, *Adrianus*, and *Augustus Caesar*; the cups have upon their sides the figures of various creatures and IVLIVS FLAVIVS in letters; on the bottom of one of these appeared very legibly these letters, REGINI.

They were no doubt the usual class of vessels of Samian, Upchurch, and Castor ware, invariably found at Roman stations. REGINI is a well-known potter's mark, and occurs on pottery found at London, York, Bath, Exeter, Gloucester, Aldborough, Wilderspool, &c. As regards IVLIVS FLAVIVS, from the name being on *the side* of the vessel, it probably commemorated some individual whose figure was introduced into the ornamentation (possibly a gladiator), as we find in other examples, notably a fine urn with lid found at Colchester.

The next recorded discovery took place in 1772, when a Roman tombstone, which I have previously mentioned, was found in Pudding Lane. The stone, which was 4 ft. by $2\frac{1}{2}$ ft., was found about five feet under ground, lying, as is generally the case with these stones, face downwards. It was inscribed

DIS . MANI
BVS
LIVL . APOL
LINARIS
TREVER . AN
XXX . EQ . AL
AE . AI
IV

This copy of the inscription is taken from the MSS. of Richard Gough, the antiquary, preserved at the Bodleian Library, Oxford, to whom it was sent by a Mr. George Ashby. In the other copies of this inscription, which have probably all been taken from *Cooke's Topographical Description of the County of Lancaster*, the third line is given as REVTER . AN, which yields no sense. TREVER is a well-known name in epigraphy, *Civis Trever* often occurring when a citizen of Treves (one of the ancient tribe of the *Treviri*) is named. The reading of this stone is undoubtedly *Dis Manibus L(ucius) Jul(ius) Apollinaris, Trever, annorum* XXX *eq(ues) alae A . . . . , i.e.* "To the Divine Shades. Lucius Julius "Apollinaris, a Trever citizen, thirty years of age, a horseman "of the Ala A . . . ."

Mr. West in his *Guide to the Lakes*, p. 20, says of this stone, that,

> A foot and two inches were broken off the lower corner on the right hand side, so as to render the inscription obscure, but the remaining letters were very plain, elegantly formed, square, and about three inches high. The inscription had consisted of eight or nine lines, of which six are entire.

It is to be feared that this stone has perished. It came into the possession of Sir Ashton Lever, was afterwards preserved in the Leverian museum, near Blackfriars bridge, London, and since the sale and dispersion of that collection in 1806, has been entirely lost sight of.

In 1774, a discovery of what appears to have been a Roman tile manufactory, took place in Quernmore park, the seat of the Hon. Edward Clifford. Mr. West says, p. 21 :—

> That these works have been very considerable may be supposed from the space discoloured with broken ware, the holes from whence the clay has been taken, and the great variety of bricks, tiles, and vessels that are found about them. But the greatest discovery is gained from a tile with turned up edges, impressed on each end with the words ALE SEBVSIA, which points out a wing of cavalry not heard of before. The same inscription is found on bricks, the label smaller, and the letters ALA . SEBVSIA. The shape of the second letter in the first word is like that in the inscription on the rock near Brampton in Cumberland, supposed to have been cut in the time of the Emperor Severus, A.D. 207, and is the fifth L in Horsley's Alphabet. On the brick the letters are square, from which it may be inferred that this wing was long stationed at Lancaster.

Through the courtesy of Miss Ffarington, of Worden Hall, I am in possession of a copy of a letter from the Hon. Edward Clifford to Sir William Ffarington, of Shawe Hall, dated October 25th, 1774, and which accompanied several specimens of the pottery, tiles, &c., sent to the latter gentleman. The letter itself, which has not been published, contains nothing of much interest; but a list of the articles sent, which is appended to it, is of some value. They consisted of portions

of amphorae, paterae, flue and roofing tiles, &c., and a piece of pottery on which was "probably part of the word SITIS, "usually inscribed by the ancients on vessels of glass, silver, "or earthenware, from which they were supplied with drink "at their meals, (see Montfaucon's *Antiquities.*)" There was also sent "a three-cornered fragment of a square tile, with "inscription ALE . SEBVSIA." The shape of the letter L in this is then described, agreeing with the account given by Mr. West, and it is added, "the dimensions of these tiles "seem to have been about 14 inches square, or something "larger."

This fragment of tile is still (1875) preserved at Worden Hall, and is now the only one from this site known to be in existence. Some of the pottery is also preserved there, though not the above-named inscribed fragment. With regard to this latter, I am inclined to think that it is merely a portion of a well-known potter's mark, SITVSIRI . M, which occurs in Mr. Roach Smith's London list.

Speaking of the site of this manufactory, Mr. Clifford further says :—

> Common brick, coarse pieces of round flues or water pipes, common flooring tiles, and remnants of almost every species of this manufactory are found near the area of the site of the kiln, part of which was standing, within the memory of men still living, and great destruction made of all the remains, in levelling the ground for plowing. Some brazen and other utensils with inscriptions were at that time found, but dispersed or converted to private use by the tenants. A stratum of charcoal with which these were burnt is found underneath and intermixed in the heaps of these remains, three or four feet and a half underground. No glazed work among it—that art being of a more modern date.

The fragments of pottery found, I opine, were merely portions of vessels that had been used by the brickmakers for domestic purposes, and do not indicate that the site was also a pottery. The variety of ware, judging from the fragments

now at Worden, seems to prove this. It is simply what we might expect to find from the long residence of a considerable population.

In vol. V of the *Archæologia*, p. 98, there is an account of some antiquities found at Lancaster, in a letter from Mr. West, read to the Society of Antiquaries, May 9th, 1776, as follows:—

Lancaster, Feb. 1, 1776.

On sinking the cellars for a large house at the upper part of Church Street in this town, now building by Daniel Wilson, Esq., on the site of which stood some very old houses (formerly called the Judges' lodgings), was discovered, at about six feet below the present surface of the street, a supposed Roman burying place, as burnt wood, bones, and ashes, broken paterae, urns, Roman bricks, gutter tiles, coins, horns of animals, &c., were found, also two fragments of thick walls, at about five yards distant from each other, in a direction from front to back, and seeming to continue under Church Street, betwixt which are several large stones, some of which were hewn. By this it may be conjectured to have been a vault to deposit the ashes of the dead, and fallen in, or pulled down at some time, as there were found, within the walls, several pieces of urns, an earthen sepulchral lamp entire (the end of the spout where the wick came out was burnt black), broken paterae, burnt bones, ashes, a large human skull, Roman coins, &c., also at the north end a well, filled with hewn stones, but not meddled with. There is a descent of about seventy or eighty yards from the back part of the house, to where it is thought the river *Lon* anciently ran, but now built upon. The ground on the said back part was levelled a great many yards, equal with the cellar floor; where also were found, from three to six feet deep, according to the descent, burnt wood, bones, ashes, broken paterae, urns, and other pieces of vessels of different shapes, Roman coins, boar's tusks, nails almost eaten with rust, pieces of lead, brass, &c. The stratum of ashes and bones was from a foot to about five feet thick. It no doubt runs quite under Church Street, if not further, as in digging a drain on the opposite side of Church Street and to the westward of Mr. Wilson's house, at about six feet under the surface, was found the same sort of stratum of ashes, bones, paterae, boar's tusks, a small brazen head like a dog's, which, by the appearance of the back part of it, has been fixed to something; the pedestal and feet-part of a small

image, thought to have been a Lar, with an inscription (it seems to be made of plaister of Paris or some such matter); pieces of glass of a blueish green colour, &c. One bottom of a patera found here had stamped on it CADGATEMA, perhaps the maker's name. These vessels are of a fine brown colour, far superior to the Staffordshire brown ware, elegantly varnished or glazed, some plain, others finely embossed with different sorts of figures, animals, and birds. The urns are in form of different sorts of jars, of a coarse kind, much like the oil jars, and some of a black colour as if burnt in the fire, some small, and some very large; but none entire, being broken into several small pieces. Some have large handles.

Nothing Roman was found above the burnt strata of ashes, bones, &c. which it may be conjectured was the then surface of the ground; and where the funeral rites were performed, the burnt bones and ashes of the persons might be buried under this stratum, as they were found in that situation with the pieces of urns. The inscriptions on the coins were none of them perfect, except one of brass of Marcus Aurelius; and another small one of silver, a fine impression, and in high preservation, of Faustina his wife; on the head DIVA FAVSTINA PIA; reverse, a monument with CONSECRATIO. The burying place is a little to the eastward and without the wall of the Roman fortification where the garrison was kept, as there now remain several vestiges of the wall sufficient to evince that it has taken up great part of the hill where the church and castle stand, and part of the upper end of Church Street. About one hundred yards to the eastward of Mr. Wilson's new house on the opposite side of Church Street, on digging a cellar a few years ago for a new house, Mr. Henry Baynes's, were found several large hewn stones, and one about six feet under the surface, supposed to be about three tons weight, of which several cellar steps were made, and about a ton weight still remains in its place, under which were found a great many Roman coins of Domitian and Vespasian, &c.; it is thought to be the corner stone of a temple or some other public building.

N.B.—There were found in Mr. Wilson's cellar, as also in the drain in Church Street, several stones thought to have been pieces of small hand-mill stones, of about thirteen inches in diameter when whole, of a blueish grey colour, and exceeding hard; they are about three inches thick at the outer edges, and not an inch in the middle.*

* See also Gough's *Camden*, edit. 1789, vol. iii, p. 141; and Simpson's *History of Lancaster*, (1852,) p. 109.

In his *Guide to the Lakes*, Mr. West says of the above, at p. 21, that the lamp which was found entire had a turned-up perforated handle to hang it by; and much regrets that the well found was not explored.

From the foregoing description it would appear that the destruction of Roman Lancaster occurred (like that of many other Roman cities) by fire; the layer of ashes being found spread over such an area, and nothing Roman having been found above it, seems almost conclusive on the point. Mr. West is right as to this layer of ashes lying on the former surface of the ground; but the ashes are those of the superstructure of buildings, and have no relation to the cremation of the dead.

In 1794, a very interesting inscribed altar was dug up in the churchyard at Halton, about three miles N.E. of Lancaster, in the immediate vicinity of a Saxon cross (also standing in the churchyard.) Although the inscription has been given by several authors, no engraving of the stone has ever appeared; but I have been fortunate enough to secure, through James Johnson, Esq., M.D., lately resident at Lancaster, a sketch of it, taken immediately after its discovery, which I exhibit herewith, and a copy of which I append.* I am not aware whether the altar is still in existence; it was removed to the stable yard at Halton Hall at the time of its discovery, but a few years ago it was not there. The inscription is—

DEO
MART*
SABINV*
P . P . ETMILIT*
N . BARC . SC
EIIVS . PO*

There is a portion of the right-hand side of the face of the stone broken off, leaving the lines incomplete. In the fifth

* Fig. I in the accompanying Plate.

Fig.1.

Fig.2.

J.E WORRALL, LITH

ROMAN ALTARS FOUND NEAR LANCASTER

and sixth lines the last letters both resemble C owing to this cause; perhaps (though very improbably) that in the fifth line may not have been that letter. In the sixth, I think the letter has been O followed by S, *i.e.* POS for Posuerunt. The whole inscription I would read thus:—*Deo Marti, Sabinus Praepositus et milites numeri Barcariorum sub cura ejus posuerunt.* Strangely enough, from an erroneous copy which had been furnished him, Dr. McCaul some years ago came to a similar conclusion as to the reading.* This latter gentleman expands "*numeri Barcariorum*" "of the "*numerus* of 'bargemen,'" deriving it from "*barca*" (a barge.)

Professor Böcking, in his edition of the *Notitia*, does the same. We have in the *Notitia* a *Numerus Barcariorum Tigrisiensium* stationed at *Arbeia*, a place whose site is not yet settled, but which was probably at the mouth of the Tees.

Professor Hübner, who had neither seen the stone nor a drawing of it, gives a somewhat different expansion.† This altar has the usual *focus*.

In the spring of the same year (1794) when the canal was being formed from Lancaster to Preston, at a place called the "Borough," in a field on the road from Lancaster to Cockerham, there was found by the workmen a *miliarium* of the Emperor Philip, who reigned from A.D. 244 to A.D. 249; together with a sculptured figure of a draped female, about two feet high (probably meant to represent Ceres); two sea lions carved in stone; and four human heads (apparently of statues) in the same material.

The inscription on the *miliarium* is—

IMP . C . M . IVLIO
PHILIPPO
PIO . FEL . AVG
M .

* *Brit. Rom. Inscr.*, p. 85.
† *Corpus Inscriptionum Latinarum*, vol. vii, No. 285.

It is now preserved at Lunecliffe (formerly Stoddy Lodge) the residence of E. B. Dawson, Esq., and the sculptures are in the grounds of B. P. Gregson, Esq., at Caton. The statue and one of the heads are exceedingly well carved. In 1872, another head, carved in stone and apparently of Jupiter Ammon, was found at the same spot, and is now in the possession of my friend, T. H. Dalzell, Esq., Mawdale Villa, Lancaster, to whom I am indebted for much information concerning the antiquities of the town.

The whole of these heads are about 15 inches each in height. The *miliarium* is a rough stone, not a pillar, as in other cases, and the letters are close to the top of it.

In 1797 an altar was found, of which the Rev. F. Lee, in the *Archæologia*, vol. xiii, p. 401, says:—

> It was dug up in clearing away some earth for improving and enlarging the Castle. This antique relick lay concealed at a little distance without the old wall, between Adrian's round tower and the great square one of Saxon architecture. This small votive altar was deposited about six feet from the surface of the ground. The height of the altar is 2 feet 2½ inches; the width at the base 1 foot 4 inches; the width at the middle 1 foot; the thickness at the base 1 foot; and the thickness at the middle 10 inches.

The inscription is—

DEO
SANCTO . MARTI
COCIDIO . VIBINIVS
LVCIVS . BF . COS
V . S . L . M .

and should be expanded *Deo Sancto Marti Cocidio, Vibinius Lucius beneficiarius Consulis votum solvit libeus merito; i.e.*, To the holy god Mars Cocidius; Vibinius Lucius a pensioner of the Consul, performs his vow willingly to a deserving object.

This altar, which is in a fair state of preservation, is now kept at Lancaster Castle. It was the first one discovered on which the name of Mars occurred with the epithet of *Cocidius*.

Since then, several others to *Mars Cocidius* have been found, chiefly in Cumberland, at Bewcastle, Walton Castlesteads, Tarraby, &c. Cocidius is the name of a British god, whose attributes most probably were those which most nearly corresponded with those of Mars.

In 1798, Roman coins, pottery, &c., were found "on cutting "a drain in Church Street, which leads to the Castle."*

In 1802 a Roman altar was found at a place called the "Foley," or "Folly," a farm about a mile north from Lancaster, in digging for the foundation of a lime kiln. It is 2 feet 8 inches high, and 2 feet broad. On one side is sculptured the *securis* or sacrificial axe, on the other the *secespita* or cutting knife, in relief. It was lying about eighteen inches beneath the surface of the ground, and at the base was broken at all four corners, which were rounded off. It was first described by Mr. Terry (but very imperfectly) in the *Gentleman's Magazine*, November, 1802, p. 993. On its face it bears this inscription—

DEO
IALONO
CONTRE
SANCTISSI
MO.IVLIVS
IANVARIVS
EM.EX.DECV

This altar was for nearly three quarters of a century in the possession of a family named Rawlinson at the Folly Farm, but is now owned by my friend Mr. Dalzell. With the exception of the third line it is easily read. Various readings have been proposed of this line; but that of Professor Hübner, who considers it an abbreviation of CONTREBI, similar to the word found on the altar at Overborough, is perhaps nearest the truth. The reading of the whole would thus be—

* Simpson, *Hist. Lancaster*, p. 115.

Deo Ialono Contre(bi?) Sanctissimo. Julius Januarius em(eritus) ex decu(rione.)

Who the deity *Ialonus* was is a matter yet to be decided. He probably took his name from the river Lone, on which, besides Lancaster, are two other Roman stations—*Alone*, at Borrowbridge, and *Galacum*, at its junction with the *Lac* at Overborough. The inscription is in good preservation.*

In 1803 there was found, after a high flood, in the bed of a little stream called the Artle beck (which, coming from the south, falls into the river Lune) near Caton, about four miles E.N.E. in a straight line from Lancaster, a very fine *miliarium* of Hadrian. It is a cylindrical column, between eight and nine feet high, and nearly four feet in circumference. The inscription on it was first published by Dr. Whitaker, in his *History of Richmondshire*, vol. ii, p. 215. Whitaker's correctness is confirmed by a copy made by my friend Mr. Dalzell and also by the Rev. J. C. Bruce, LL.D., the well-known author of the *Roman Wall*, who, at my request, inspected it in November, 1874, in Mr. Gregson's grounds at Caton, where it is preserved with the sculptures before mentioned. The inscription is—

IMP . CAES
TR . HADRIA
AVG . P . M . T . P
COS III . P . P

>I M . P . III

The only difficulty in this inscription is in the last line, where

* Professor Hübner says of this altar, *Corpus Inscr. Latin.*, No. 284:—"Nomen dei fortasse corruptum est, cf. n. 290," [the Overborough altar,] "et "nomen oppidi Hispani Contrebia. Ex decurione Ianuarius fortasse fuit alae "Sebosianae." With regard to these remarks, if the name of the deity is corrupt, it has been so given by the dedicator—the inscription is certainly correctly given. I am inclined to agree with him however as to the origin of *Contrebi*, and also as to Ianuarius being probably an *emeritus* of the *Ala Sebosiana*.

the form before the M is puzzling. Were the stone similar to others of its class, it should have here given us the Roman name of Lancaster; what follows M . P . is plain enough, giving the distance as three miles from that town. This stone may have been erected any time between A.D. 119 and A.D. 138, for Hadrian was only Consul three times, and the omission of the numerals after T . P prevents us from knowing the exact year of its erection.

Mr. Baines, in his *History of Lancashire*, (edit. 1836), vol. iv, p. 488, says (speaking of the altar to Ialonus), "since "the discovery of the above, another Roman altar has been "found in a garden in the Vicarage field, near the track of "the *Wery-wall*. It bears no inscription, but on one side "the figure of a sacrificial knife is visible." I am not aware where this altar is now preserved.

Mr. Simpson, in his *History of Lancaster*, p. 116, quotes a passage from the *Lancaster Gazette*, dated 7th October, 1809, to the effect that "on carrying a drain through Church "Street, to meet with one from the Castle, the foundation of "a wall composed of large hewn stones, laid in regular "courses, has been brought to light; also many fragments of "a beautiful red species of pottery with figures embossed in "relief. On one there is Apollo playing on a lyre; on "another a horse in full speed." On one of these fragments the letters QVINTILIANI . M . were distinctly marked—being the potter's mark—one well known on Samian ware. A silver coin was also found, on which, besides the head of the Emperor, only the word ANTONINVS could be made out; on the reverse was "a figure of Justice sitting." Another one of copper, found at the same time, was of the Empress Faustina; reverse, a figure standing, with the legend IVNONI REGINAE S . C.

Another *miliarium* of Philip appears next to have been found, described by Mr. Simpson, at p. 118, thus:—"In the

"spring of 1811, a Roman *miliarium* or milestone was found "in ploughing a field adjoining the canal, in the parish of "Ashton, so near the surface of the earth that it was struck "by the ploughshare of the husbandman." It bore the following inscription in very slender letters :—

IMP . C . M . IVLIO
PHILIPPO
PIO . FEL . AVG .

This is to be read, as is also the other to this Emperor,— *Imperatori Caesari Marco Julio Philippo Pio Felici Augusto.* To the Emperor Caesar, Marcus Julius Philippus the pious, the fortunate, the august. I have been unable to trace the whereabouts of this stone. Some have thought it to be one and the same with that preserved at Lunecliffe ; but the dates and circumstances of the discovery seem completely different. Dr. Hübner speaking of these stones, which are Nos. 1172 and 1173 in his work, says of the one preserved at Lunecliffe—"Coaeva sed tamen diversa a praecedente." In this I agree with him.

In September, 1812, according to Mr. Simpson (p. 119), two Roman querns (or millstones), some pottery and bones, were found in draining operations in Pudding Lane.

The next discovery was a most interesting one. It appears to have been first published by Dr. Whitaker in his *History of Richmondshire,* vol. ii, p. 213. As that work was published in 1823, it must have occurred previously to that year, but the author does not specify the date of its discovery. It is a handsome tablet, bearing an inscription within a sunken panel, which is on one side flanked by the figures of two dolphins. It was found in a garden at the top of Church Street, and is not quite complete, a portion of the top and left side being broken off. The inscription is, after divesting it of the ligatures or tied letters—

* * * * * * * * * * *
* * * * * * * * * * BALINEVM REFECT
* * * ASILICAM VETVSTATE CONLABSAM
* SOLO RESTITVTAM EQQ . ALAE . SEBVSSIA
SVB . OCTAVIO . SABIN V C
PRAESIDE . N . CVRANTE . FLA . AMMAV
SIO . PRAEF . EQQ . D . D . XI . KAL . SEPTEM
CENSORE II ET LIPIDO II . COS

The asterisks mark the portion of the stone lost: where the blanks are, in the first and fifth lines, the inscription has been purposely erased in Roman times. This was a matter of frequent occurrence, after an Emperor had become unpopular and had been assassinated. In this case, the Emperor whose name had been erased in the first line is probably either Caracalla or Elagabulus. Dr. Hübner, who inspected the stone at St. John's College, Cambridge, where it is now preserved, thinks he could detect a small 'o' above the 'N' in SABIN; but whether it is so or not, the reading would not be affected. The same may be said of *Lipido*, the first 'I' in which he thinks may have been 'E.' The blank in the fifth line has been an epithet, which the *ala* has assumed from the name of the unfortunate Emperor, probably *Antoniniana*. The names of the Consuls in the last line not occurring in the Consular Fasti, and being otherwise unknown, they were no doubt merely *Consules suffecti;* had it been otherwise, we should at once have known the date of the tablet. The reading which Professor Hübner gives of the inscription, as it now exists, and in which I agree with him, is—

"... (*ob*) *balineum refect*(*um*) (*et b*)*asilicam vetustate* "*conlabsam a solo restitutam eq*(*uites*) *alae Sebussia*(*nae* ".....) *sub Octavio Sabino v*(*iro*) *c*(*larissimo*) *prae* "*side n*(*ostro*) *curante Fla*(*vio*) *Ammausio praef*(*ecto*) "*eq*(*uitum*). *D*(*atum*) *d*(*edicatum*) XI. *Kal*(*endas*) "*Septem*(*bres*). *Censore* II *et Lepido* II *co*(*n*)*s*(*ulibus*)."

The facts we gather from this stone are, that on the eleventh

of the Kalends of September, in the year when Censor and Lepidus (each for the second time) were *Consules suffecti*, the *Ala Sebussiana*, under the instructions of Octavius Sabinus,* a man of illustrious rank and President *(praeses)* of the province of Britain, rebuilt a bath and restored from the ground a basilica which had become decayed with age; and that Flavius Ammausius, a praefect of horse (no doubt the commander of the regiment) superintended the work.

Unless the tiles found in London, and which bear the inscription P . P . BRI . LON . read (as I think they do) *Praeses Provinciae Britanniae Londinii*, no other inscription in which the Governor of Britain is called *Praeses* occurs in our island. The name of the legate is also otherwise totally unknown.

Another fact that we may gather from this inscription is, the early date of the erection of the station, when such a building as a basilica required renewing on account of its ruinous condition so early as between A.D. 217 and 222. It at once shows that Lancaster may have been a Roman station as early as A.D. 79, and have been erected by Agricola. Considerable remains of the bath appear to have been found at the same time as the inscription, for Whitaker says, p. 214 :—"At the "same time when it was discovered, remains of the bath, to "which it refers, were also taken up. It appears to have "been a cold bath, as there were no appearances of a hypo-"caust; and the paving, as usual, had been channeled to "prevent the feet of the bathers from slipping." Dr. Whitaker, at p. 213, gives an engraving of the tablet.

A rather peculiar event marks the next reported discovery.

* In the *Ephemeris Epigraphica*, vol. i, p. 130, Professor Mommsen has an article upon a person who appears, from Continental inscriptions, to have borne the names of Caius Octavius Appius Suetrius Sabinus, and to have been the imperial legate in Pannonia (Inferior) and Raetia, legate of the 22nd legion, and held many other posts. He was Consul A.D. 214. Professor Mommsen in this article raises the question (p. 142), whether the Octavius Sabinus of this Lancaster inscription is the same person; but no satisfactory conclusion is arrived at.

Mr. Baines, in vol. iv of his *History of Lancashire*, p. 489, says :—"In A.D. 1830, a stone was found by the workmen "employed in digging a cellar on the Castle Hill. It is a "plain square monument, with an imperfect inscription, which "seems to record the death of a son of Julian Probus." Two pages previously (p. 487) Mr. Baines, in speaking of the sculptures found at Borough, says that this stone was preserved with them in Mr. Gregson's garden in Queen Square, Lancaster. As I was aware that all the sculptures formerly preserved in this garden had been removed to Mr. Gregson's grounds at Caton, I asked my friend Mr. Dalzell, in the summer of 1873, to visit the latter place, see if the tombstone named was there, and, if so, obtain a copy of the inscription. He did so, and sent me a copy of the lettering on the stone. To my surprise I found it identical with an inscription first described by Lysons, in the *Magna Britannia*, as being found at Birdoswald, the ancient *Amboglanna*, in Cumberland, and given by Dr. Bruce in the *Lapidarium Septentrionale*, No. 383, and which he had reported as missing. In one of my letters to Dr. Bruce I mentioned this fact, when he at once went over to Caton, and identified it as the missing stone—engraving it in the Appendix to the *Lapidarium Septentrionale*, p. 474. It is a stone 2 feet 2 inches in height by 1 foot 2 inches in breadth, and inscribed

D . M
AVRELI
CONCOR
DI . VIXIT
ANN . VN
VM . D . V
FIL . AVR
IVLIANI
TRIB.

How it got to Lancaster from Birdoswald it is impossible to say.

In 1834, another *miliarium* was found on the Castle Hill. It is not cylindrical but rough, and is now preserved at Lunecliffe, with the milestone of the reign of Philip. Like the latter, the lettering is quite at the top of the stone, which is 5 feet 6 inches in length, and is inscribed

IMP C D N
CAIO MESSIO
QVINTO DEC
TRAIANO P FEL
ICI INVICTO AVG

i.e., Imp(eratori) C(aesari) D(omino) N(ostro) Caio Messio Quinto Dec(io) Trajano P(io) Felici Invicto Aug(usto). This Emperor reigned from A.D. 249, when he succeeded Philip, to A.D. 251, when he was killed in a sanguinary battle with the Goths.

In the Mayer Museum, Liverpool, there is a small altar of terra cotta, about 8½ inches high and 4 inches broad, in the case of antiquities found at Lancaster, and which bears the inscription in relief—

SILVANO
TETTO
SERVS
FITACITI
EX . VOTOR

Mr. Mayer informs me that it was found in cutting a railway at Lancaster, *circa* 1855; but I think this a mistake, for on examining it, I found underneath it most unmistakeable traces of its having been purchased, and I believe from the establishment of Mr. W. Chaffers, F.S.A., in London. In fact, the altar seems to have been discovered at Heiligenberg, on the Franco-German boundary, in 1840, as the exact inscription occurs in a description of some Roman pottery, &c., found at that place in 1840, by Mr. C. Roach Smith, F.S.A., in the *Antiquities of Richborough, Reculver, and Lymne,*

p. 71. The inscription occurred first on a vase, and was "repeated with slight variations on several small altars in "terra cotta."

Mr. Simpson records, p. 121, the discovery of a cinerary urn, in digging the foundation of St. Thomas' Church, and another in 1847, containing burnt bones, and the skull of a child, found in Queen Square; and in 1849, the discovery of a number of Roman coins and an iron spear-head,* in Marsh Lane, in digging for the junction of the North Western and Carlisle railways.

Vast quantities of coins have been found in Lancaster. Baines notices, p. 489, a silver one of Otho, A.D. 69, found in December, 1834, "in the garden of Joseph Dockray, Esq., "a little below the parish church." *Obverse*—bust of the Emperor, with legend IMP . M . OTHO . CAESAR . AVG . TR . P . *Reverse*—SECVRITAS . P . R . surrounding a figure bearing in the right hand a chaplet and in the left a spear. On the same page, Baines also enumerates a list of the Emperors whose coins had been found in the churchyard within a few years previously to 1836: they are Vespasian, Domitian, Hadrian, Antoninus Pius, Marcus Aurelius, Commodus Maximus, Diocletian, and Licinius. During the same period, he says, that about a hundred coins of Constantine and of Probus had been picked up; also one inscribed CONSTANTIVS . NOB . CHES. The latter word is certainly CAES. Many others have since been found, of which the writer has been informed. In 1837 and 1838, copper coins of Domitian and Antoninus Pius were found in this churchyard. Extensive collections were formed by the late Canon Turner (Vicar of Lancaster), the late W. Jackson, Esq., the late Benj. Dockray, Esq., the late Mr. Parkinson, and the late Mr. Corbyn Barrow. The latter collection was some time

* This is now in the possession of Mr. Dalzell.

ago presented to the Lancaster Mechanics' Institute, after being catalogued by Mr. Dalzell. They are at present deposited in the Lancaster bank for safety.

On the 15th of August, 1856, a workman engaged in cutting away the embankment at the bottom of Bridge Lane, at the foot of the *Wery-wall*, to make way for some new cottages then about being erected by Mr. Thomas Harrison, came upon a hoard of about one hundred denarii, all of the higher empire. These silver coins quickly got dispersed; but fourteen of them came into Mr. Dalzell's possession, of which seven appear to be of Vespasian, one of Titus, one Trajan, one Hadrian, and four Consular. The same gentleman has also a number of first and third brass of various Emperors, found at different times.

The potters' marks found at Lancaster have not been closely investigated. Mr. Dalzell tells me that he saw the following on pottery found in Church Street in 1868—'70 and '71 :—

A . POLAVSTI	DAGODVN VV	
. TICOTAKI . M	DIVES	
SVLPLICIANI		HB
CADGATE MA	ANIEACIO	or
QVINTILIANI M		NEB

And in 1872, pottery, with the name IMANNI, was found. The first, third, fifth, and sixth occur in various parts of England; the fourth we have before seen was also found in 1776; and the fifth also in 1809. IMANNI also is well known. These, with the REGINI mentioned by Dr. Leigh, seem to embrace the whole of those known to have been found. No. 2 has, I think, been wrongly read.

One point more remains to be spoken of, and that is, the Roman roads connecting Lancaster with other Roman stations. They are three in number. The first was to Overborough *(Galacum,)* and would appear for a considerable period to have been the only large road connecting Lancaster with the

rest of Roman Britain. I think Dr. Whitaker is correct in the assumption that this road was found to be "inconvenient, "dilatory, and toilsome." "I have proved," says he, "from a "late discovery, that it was always impracticable for carriages." Whitaker then goes on to say, that from the discovery of the *miliarium* of Philip, he thinks that the road south from Lancaster to the neighbourhood of Preston, (where it falls at nearly right angles upon the fine Roman road from the Fylde to Ribchester), was constructed in that Emperor's reign. In this I concur with him. From its point of intersection it would prove a continuation of the fine road from Manchester (via Wigan and Walton) to Ribchester, and thus unite Manchester with Lancaster by a road almost, as Whitaker says, on "a perfect plane." This was the second road issuing from Lancaster; and the third seems to be its continuation, leading northwards to the station at Natland near Kendal, and probably completed by Decius, the successor of Philip in the empire, A.D. 249—251, from the fact of the *miliarium* bearing his name having been found on the Castle Hill.

Whitaker apparently adopts this view as to both roads, for he says, vol. ii, p. 213—

> It is another curious fact, that this latter iter is differently constructed from the great Roman pavement of the upper empire. I have been assured by an intelligent person who has seen a portion of it dug up in the *Fylde* [*south* of Lancaster], that it was constructed much like a common highway, with small broken stones compacted by time and pressure. And I have myself taken up a portion of the same way near the Folly, about a mile from Lancaster to the *north*, and pointing upon *Concangios*, [he erroneously gives this name to the station at Natland] which in the mode of its construction precisely corresponded with this account.

Such are the vestiges of the Roman age left to us in the capital of the County Palatine. It is much to be wished that systematic excavations could be made, in the Vicarage fields and at the foot of the fragments of the Wall now existing.

Stukeley, *Itin. Curiosum*, vol. ii, p. 38) says, "All the "space of ground north of the church is full of foundations "of stone buildings, Roman, I believe, and much stone has "been taken up there." The sites of buildings are still here and there traceable (1875) by the irregularities of soil in the neighbourhood of the vicarage. Mr. Simpson also tells us, p. 116—"Whenever cellars have been sunk, or similar excavations made, in certain parts of Lancaster, a variety of "Roman antiquities have been invariably discovered; and "particularly in the upper part of Church Street."

Taken in connection, these statements by Stukeley and Simpson serve to shew that the soil teems with Roman remains, which merely require to be collected, in order to throw a flood of light upon the name, size, history, and fall of the town. Is there not sufficient spirit in the locality for the inauguration of such a course? It rests with the present generation to decide. A few years and it will be too late.

Note.—Since writing the above I am informed, by the Vicar of Halton, that the altar found in 1794 is now preserved in the study at Halton Hall, where it is built up into the wall, with a glass framing in its front. The altar found at the Folly has been lately removed by Mr. Dalzell to his new residence, Clifton Hall, near Workington, where he has had it photographed, to enable me to supply the engraving herewith given (Fig. 2 in the Plate). With the exception of a small and very incorrect engraving of it in the *Gentleman's Magazine* for 1802, it has never before been engraved. The Halton altar also is now engraved for the first time.

J BLOWN SAND.		Hills formed, and now in course of formation, from sand blown inland from the shore.
I *Bithynia Sand.*		Ferruginous and argillaceous seams, or strata, deposited in water; *Succinea*, very plentiful in the argillaceous bed.[*] Occasional beds of peat.
H LAND SURFACE SOIL.		Antiquities from the pre-historic period to the close of the fourteenth century. Shells of the edible mollusca are very plentiful, but much broken by cultivation of the soil.
G *Tellina Balthica* SAND.		A silty sand, containing remains of *Tellina-Balthica*, and Whelk (*Buccinum undatum*), both scarce.
F SANDY PEAT.		Peat, laminated with thin seams of sand in the upper part of the bed, but gradually sinking into a silty sand. *Limnea ; Planorbis*, and other fresh-water shells are very abundant through the whole thickness of the bed.
E *Upper Scrobicularia* CLAY.		Sandy clay, containing the remains of marine mollusca, similar to those found in the shallow water on the coast.
D UPPER FOREST PEAT		Laminated. Formed from the growth of fresh-water plants, in situ. Imbedded arborescent remains, and fresh-water shells, the latter scarce.
C *Lower Scrobicularia* CLAY.		Marine shells in great abundance, also bones of *Cetaceæ ;* Ox, Deer, Boar, and a few remains of *Bos primigenius*. The latter are probably washed from an older formation.
B LOWER FOREST PEAT.		This bed is precisely similar in its formation, and imbedded arborescent remains to stratum D, excepting that the prostrate trunks greatly exceed in number the standing butts.
A GLACIAL OR MARINE BOULDER CLAY.		Very full of stones, varying in size from gravel to the erratic boulder of several tons weight.

GEOLOGICAL STRATA ON THE SEA-COAST OF CHESHIRE,

BETWEEN THE LEASOWE EMBANKMENT AND GREAT MOELS.

OBSERVATIONS ON THE GEOLOGY AND ARCHÆOLOGY OF THE CHESHIRE SHORE.

By Charles Potter, Esq.

(Read December 9th, 1875.)

Although I have chosen this title for the paper, allow me to say that I make no pretension to a knowledge of the latter science, and to but little of the former.

I feel that, after the many years in which you listened to the literary treats supplied you by Mr. Henry Ecroyd Smith, what I may have to place before you will prove less interesting both in matter and treatment. I am grateful at having this opportunity of adding my testimony in appreciation of that gentleman's ability as an antiquary; and that Liverpool, and this Society in particular, have sustained a great loss by his removal from this neighbourhood. In his new sphere of occupation, I sincerely hope he may find leisure, combined with congenial pursuits, and a long and happy life of usefulness.

On the sea-shore of the Cheshire peninsula the new red sandstone crops out in the neighbourhood of the Mersey, in the rocks locally so well known as the Red and Yellow Noses. And in the neighbourhood of the Dee, it is visible in what is known as the Red Rocks and the Rocks of Hilbre.

From each of these outcrops, the sandstone dips towards Leasowe; the embankment erected there by the Commissioners of the Mersey Docks and Harbour Board being about midway along the shore of the peninsula. In this trough has been deposited the glacial or boulder clay, and above it those beds which

I purpose describing in this paper. The surface of the glacial clay is very irregular, in one place rising as a boss or hillock, in another sinking into considerable hollows. Wherever the clay rises above the level of an ordinary high tide, the two forest peat beds, with the intervening silt, thin out, and thicken in proportion as its surface sinks below this level.

The lower forest peat bed (B),* which lies immediately on the glacial clay, seldom attains a thickness of eighteen inches on the Cheshire shore, being much the thinner of the two forest peats; in other localities, I have found the lower considerably thicker than the upper. With the exception of the arboreal remains imbedded in it, this peat is composed entirely of fresh-water materials and growth; the plants being principally the flag (*Iris*) and rush (*Sunceæ*), the annual fall of which has given a laminated character to the bed. The arboreal remains consist mostly of oak (*Quercus Robur*) and pine (*Pinus Sylvestris*). There are very few rooted butts in this bed, for each of which there are at least ten imbedded trunks.

(C.) A marine silt rests on the lower forest peat. In places, this is so like the glacial clay that one is scarcely to be recognised from the other; yet their distinctive characters may be readily detected by the total absence of stones, gravel, or even coarse sand in the silt, whilst the glacial clay is full of these materials, varying in size from coarse sand or gravel to the erratic boulder of many tons in weight. Some fine specimens of the latter may be seen in the grounds of Leasowe Castle, in a gateway at the top of the embankment.

A distinctive character of the silt is its laminated structure, which is so clearly shown on its sea front, and the organic remains to be found in it, the principal among the latter being *Scrobicularia*. It was the large number of these mollusca which are distributed through this bed, and which did not

* See Plate.

appear to have been previously observed, that induced me to name it "*Scrobicularia* clay," a name which I am pleased to know has been generally adopted. It would appear that currents existed in the waters in which the *Scrobicularia* lived and died. These currents have cut channels through the lower peat, where thin, down into the glacial clay. Such channels appear to have been the favourite habitat of the *Scrobicularia*, which may be traced in narrow beds running through the whole thickness of the stratum and what remains of the lower peat, for a considerable distance on the surface of the glacial clay.

In a paper published in the Transactions of the Liverpool Geological Society for 1868-69, I stated that the change from salt water, in which the *Scrob.* clay was deposited, to fresh, in which the peat above was formed, was gradual; and as a reason for coming to this conclusion, I stated the fact that I had found a colony of the *Scrobicularia* wholly imbedded in the peat, which, with both valves united, were erect in the bed. I particularly mention this fact, as since the publication of the above-mentioned paper it has been stated that at least three inches of the upper part of the *Scrob.* clay was formed in fresh water, from the fact that the Iris was found to have penetrated it to that depth. It will be found that very much of this Iris, from its uncompressed state, is of recent growth, when compared with the growth which so largely enters into the composition of the forest peat beds, the whole of which is highly compressed.

For the fact that the Foraminifera found in this bed and bed (E) are identical with those to be found in the sea washing our present shore, we are indebted to the Rev. H. Crosskey, now of Birmingham, he having been the first to make a microscopic examination of the material of which these beds are composed. Trunks and butts, with outspread roots, are to be found in this marine stratum, although in

much smaller numbers, in the same imbedded state as in the peats above and below it.

(D.) Upper forest peat may be considered as a duplicate of the lower forest peat in its composition from fresh water growth and materials, with the exception of a few inches at the bottom of the bed, in which, as before stated, the presence of *Scrobicularia* proves it to have been brackish, if not pure sea water, in some places. Again, the Iris, except the more recent growth, is comparatively absent from this lower portion of the bed. The arboreal remains in this stratum consist principally, as in the lower bed, of oak and resinous fir, beech, and yew. A very fine beech butt, with its bark intact, was a prominent object amongst the oaks and pines a few years since; but it has disappeared, and the ground on which it stood is now washed away. In the upper part of this bed I have found a colony of the fresh-water mussel (*Anodon*), and of the marsh snail (*Limnea*).

(E.) A bed resting on the upper forest peat I had ascertained to be a marine formation; and as such described it to the Liverpool Geological Society, to whom I left the honour of naming it. As they failed to do this, I adopt with pleasure the designation subsequently given to it by Mr. De Rance, of the Ordnance Survey, viz., "Upper *Scrobicularia* Clay." With this stratum the coarse drift sand, so *increasingly characteristic* in after deposits, makes its appearance; it enters so largely into the composition of this bed, as compared with the fine argillaceous material forming the lower *Scrob.* bed, that where the upper forest bed is absent, and in consequence the upper and lower *Scrob.* beds are in contact, the one may be easily distinguished from the other by a careful observer. This bed may be better examined to the eastward of the Leasowe embankment, than to the westward of it, as on the west it varies considerably in thickness and is usually covered with sand. Leaving the embankment at Leasowe

Castle, a peat bed (F), about ten inches in thickness, will be seen stretching along the foot of the sandhills, towards the Mersey. Generally, the upper *Scrob.* bed (E) may be examined to advantage immediately under this.

The *Scrobicularia* besides being mostly found with both valves united, and erect in the bed, in this deposit are generally mixed up with the more common mollusca of our present shore. This I have not observed to be the case in the lower bed.

The upper forest peat (D) when free of sand (in which state I have not seen it for three years) was to be seen a few yards landwards of a line continued towards the Mersey. From the sea-front of the embankment, its thickness nowhere exceeded three inches in the exposed part. A butt, which is still standing a few yards from the end of the embankment, rose through it, although the recoil of the waves from the butt had cleared away the peat immediately around it, leaving the lower *Scrob.* clay exposed in a shallow basin-shaped cavity. About thirty yards further east was the root of a large fir, exposed on the surface of the peat.

Directly under this, the upper forest peat, and standing out in their normal state of imbeddedness from the clay, was one of those narrow beds of *Scrobicularia* (so characteristic of this clay on the other side of the embankment), which ran down the whole length of the exposed surface, here fully three hundred yards, to the lower forest peat.

(F.) The peat before mentioned, overlying the upper *Scrob.* bed on the Leasowe side of the embankment, contains a few fresh-water mollusca, principally *Succineae.* This stratum should not be mistaken for either the upper or the lower forest peats, from which it differs very considerably. The two forest peats are almost, if not quite, destitute of sand, whilst this is largely composed of it. The fresh-water plants of which the forest peats are to so great an extent composed,

are in a high state of preservation; in this, the vegetation is mostly decomposed, probably from exposure to subaërial influences.

The two lower peats contain such large quantities of arboreal remains that, wherever exposed, they have the name of forest peats, or forest beds, instinctively given to them. This peat is almost destitute of any such remains. The bed is overlain by a very distinctive peat, which, although in some places separated by a thin layer of slightly peaty sand, must be considered to belong to the same stratum or formation. This upper portion of the peat contains *Succineae* in larger quantities than the lower, on the Leasowe side of the embankment; but its chief characteristic consists in its being divided, by thin seams of drift sand, into three or four layers of about an inch in thickness, and by this it may, on either side of the embankment, be readily distinguished from all other peats on the Cheshire shore.

On the west of the embankment this bed assumes a very different character, and in the lowest part is mixed with an amount of brown argillaceous deposit, which contains the remains of fresh-water mollusca in immense quantities, and of a great variety of species. As it rises, it becomes more and more of a peaty character, up to the peat so evenly divided by the seams of sand. The difference in this stratum on the Meols shore, as compared with that on the Leasowe shore, arises from the fact that the latter is at a higher level. There would in consequence be a depth of water in the Meols neighbourhood better adapted to the requirements of the innumerable organisms whose remains we there find.

(G.) A very sandy silt about ten inches thick. In this bed I have failed to find any organisms which would reliably stamp its origin as of either marine or fresh-water; but Mr. De Rance appears to have done so, and has named it *Telina Balthica*, thus placing it with the marine formations.

If we go back to the glacial clay, which is a marine formation, we find, as we ascend from that deposit, each stratum alternates, and that a marine deposit is in each instance overlain by a fresh-water formation.

(H.) Here we have the land surface or cultivated soil of the country. This stratum varies very much in thickness, as the section on the shore when clear of sand shows, where it may be seen ranging from one to four feet in depth. It is a sandy, peaty soil, and through its length there is the strongest proof of a long period of tillage. Land shells, mixed with large quantities of those belonging to the edible mollusca, are to be found through the whole thickness of the stratum. Of the latter, two shells are seldom found united; and for the most part they are very much broken. These have undoubtedly been brought, or the greater part of them, to the locality in which they are found, for food by the inhabitants of the district. Of the relics of man's handiwork accumulated in this stratum, I shall speak more fully elsewhere.

(I.) For fully eight feet above the surface soil, the sands forming the sea cliff have undoubtedly been acted upon largely by standing flood water; evidence of this is to be found in several thin but well-defined beds in the drift sand up to that height. These consist of peats, iron or ferruginous beds, and thin light-coloured beds very full of fresh-water shells. Of these beds I shall have also to speak more fully when treating of the antiquities and the place of their interment.

(J.) The sand dunes or hills above these horizontal surfaces have accumulated from subaërial causes which are still in operation.

There was a time when I believed that the whole of the arboreal forestal remains, so largely exposed on the Cheshire shore,—and which are to be found in nearly the whole of

the marsh lands and river valleys of Great Britain, Ireland, and many parts of the north of Europe,—germinated, grew, and decayed where we now find them. But, having accidentally come upon a small unresinous fir, in an undecayed state, underlying the bole of a large oak, both of which were closely and firmly imbedded in their surrounding matrix, a doubt arose in my mind whether my preconceived opinions were correct. Subsequently, I found that seldom were two of these trunks to be seen lying parallel to each other; and still less frequently was a trunk to be found in a position near to a butt, which would have suggested that they had once belonged to one and the same tree. I also observed that the roots of the standing butts were as likely to be spread out above the prostrate trunks as below them; and that in number the butts and trunks bore no relative proportion one to the other. The standing butts in the lower peat-bed, being not more than as one to ten of the trunks, is a fact almost overwhelming to the *theory of growth in situ;* as, the trunks being once broken off, their total or partial removal from the surface-soil on which they had grown might be caused by flood or decay; but that the trunks in a sound state should remain, and the roots and butts be removed from their undisturbed beds, appeared to me to be impossible of explanation—and seems so still.

As previous observers had overlooked these facts, I determined to investigate the subject further, and satisfy myself on it. These investigations caused me to change the opinion I had first formed; and I shall adduce additional reasons for concluding that the whole of these forestal remains had drifted from elsewhere, and I hope to be able to prove that *none* of them are now in the position in which they grew.

Very few thoughtful people could look on these beds without the question arising to their minds,—What can that power have been which has broken these trees off at the height

we see them ? The horizontal spread of the roots shows that they have grown in a shallow soil. I have never seen, nor have I heard of, one which had a tap root. Under ordinary circumstances, such trees would by wind or water be uprooted, instead of being broken off at the largest and strongest part, which is just above the surface of the soil in which they grew. Here is to be seen broken off in this manner the strong oak, and the stronger and tougher yew. The only feasible conclusion at which I can arrive, to account for the fact, is, that wind, aided by frost, has been the means. The power of wind is thus described, in a treatise by Dr. Mozely. In speaking of a tropical storm,* he says :—

"The frightened animals in the field assemble together, "and are almost suffocated by the impetuosity of the wind in "searching for shelter, which, when found, serves only for "destruction; the roofs of houses are carried vast distances "from their walls, which are beaten to the ground, burying "their inhabitants under them; large trees are torn up by "their roots, and huge branches are shivered off and driven "through the air with immense velocity. Every tree and "shrub that withstands the shock is stripped of its boughs "and foliage; plants and grass are laid flat on the earth: "luxuriant spring is changed in a moment to dreary winter."

Can any person read this description of the appearance of a country after a hurricane, without being at once struck with the resemblance which the imbedded trunks, seen in these peat-beds, bear to it ? With the exception that they are not torn up by the roots, the branches are stripped from the trunks, or the heads have been broken off before the trunks have finally succumbed. About five per cent. of these trunks have their butts attached—that is, they have not been broken off above the surface of the soil in which they grew—and three of these I have seen which had a portion of a single root or lead attached. With this exception, the whole of the roots which

* A similar tornado occurred in the Isle of Wight, while this paper is passing through the press; viz., in September, 1876.

I have seen are as completely wrenched from the butts as are the boughs from the trunks; showing that the power which held them in the ground was superior to that of the tough fibre of either the oak or the yew.

I have been informed, on the most unquestionable authority, that in North America, wind does at times exert its force in a manner similar to that described by Dr. Mozely; and that, when the land is hardened by the winter frosts, the effect of the wind is not only to strip the boughs from the trunks, as is done in the tropics, but that, instead of uprooting, it will snap the trunks of the largest trees, just above the surface of the ground, in exactly the same manner as they are seen to be broken off in these beds. The frozen soil forms the fulcrum, or resisting power to the force of the storm.

Can we imagine, under any circumstances, if the trees are in the position in which they grew, that not one fallen tree is to be found with its roots doubled under it on the side to which it has fallen? And yet I question if one has been, or will be, so found.

Judging from the great size and consecutive rings of many of the trees, their growth must have extended over centuries; and yet in no part of these beds is there any indication of decomposed vegetable earth or soil. Let the sea wash over the surface of these peats, and it is almost powerless to disturb them, the wasting action of tide and storm is almost confined to their sea front, which it breaks up in solid masses, but not until the underlying tenacious silt or glacial clay has been washed away; and so indestructible are these detached masses, that where exposed to the full force of the breakers, they will remain for months as rounded nodules, like the sea-worn boulders derived from our hardest rocks.

The fact that the horizontal trunks of the trees are found in the lowest part of the beds, and through the whole thickness, until they rise or slightly project from the surface, is

proof that they were being deposited during the whole period that these beds were forming. Soft-wooded trees, as the birch and unresinous firs, lying at the bottom of the bed, are likely to be sound from the centre to the epidermis, whilst the resinous firs and the oak, lying beside, across, or in any part above them, are soft and rotten; or the reverse may be the case. Under any circumstances the tree trunks and boughs must have been covered up, where we now find them, by the natural growth and deposition of the fresh-water plants, of which these beds are composed. Is it then possible to account for these different conditions of soundness, if we exclude the fact, that one must have been more decayed than the other previous to being imbedded?

The outspread roots of immense oak butts are frequently to be seen, from which all the softer wood has been cleared away by decay, that which remains being thin and angular; fully two-thirds of the original length and thickness are gone. Had this clearance of wood and bark been made after the tree was imbedded by growth or otherwise, in a consolidated peat, a cavity would be left between the sound wood and the peat, containing the rotted remains; or the cavity would be filled with subsequent vegetable growth or material, which would be easily detected. But no such cavity exists or has existed. The peat envelops what remains of these old, weathered, and once gigantic roots as closely as it does the roots which are, as in their normal state of growth, with their skin or epidermis unbroken, and nothing but their rootlets gone.

Again, as I have before mentioned, the standing butts have, in many cases, the prostrate trunks lying immediately under them, while the roots of the butts are spread out upon these prostrate trunks; yet in no case do these roots *fashion* and adapt themselves to what they rest upon. I have seen examples where they appeared to do so, but closer observation proved that it arose solely from the pressure of the superincumbent

beds; and most of the smaller roots and branches are found to be more or less flattened from the same cause.

It should be borne in mind by those who argue that these trees have lived and died where we find them, that such portions as have grown above the earth, including the trunks and branches, would, on being broken down, lie exposed on the surface of the soil for an indefinite period of time before they could,—by the annual growth of vegetation from below, and the leaves, &c. from above,—become buried by a vegetable soil. But how deceiving it would be to speak of three inches of earth covering the branch of an oak, which should not exceed three inches in its largest diameter: the natural bends and crooks in the bough, and the spread of the branchlets above or below an assumed horizontal line must be taken into consideration. For instance, if an entire oak-bough three inches in diameter be placed on a level surface, in most cases some portion of it, or its branchlets, would rise as many feet above that surface. I have found, on the Cheshire and Lancashire shores, in these beds, tree trunks which had their upper or smaller ends buried in the undisturbed peat, the larger or butt ends projecting considerably above the surface. In another case a large oak butt had settled down on the butt of a pine, which was forced thereby out of the perpendicular, and projected from below the oak at an angle of about 75 degrees: both were in a sound state. In the Hull dock peat-bed I observed a very large oak butt, with its outspread roots resting on the small end of an equally large oak trunk, the larger end of which was tilted by the weight of the butt resting on its opposite extremity.

But the most convincing proof that the tree butts sunk through water to where they are found, and that the materials of which these beds are composed was gradually formed by deposition and growth, around and over them, was to be seen in the forest bed on the sea shore at Selsey in Sussex. Whilst

examining those beds, in the company of Mr. W. Woodlands, of Medmeney farm, I found the butt of a pine which had been broken off at about the usual height (eighteen inches), which had been overturned ; what remained of the trunk was firmly imbedded in the undisturbed stratum, the root being uppermost and slightly projecting from the surface. I will mention one other fact, which to my mind is conclusive that these trees cannot have grown where we see them. The peats being stratified, and very finely laminated, would give proof or evidence of the intrusion of a foreign body, and I hesitate not to affirm that it would be impossible for a root in its first stage of growth, as a delicate filament, to expand with the growth of the tree until it has attained a diameter of eighteen inches or more, and not displace, or in any way crush the laminæ, or disturb the stratification.

Suppose pieces of thin board, or strips of leather, to be placed one upon another until a thickness of twenty-four inches was attained, and that the thin edge of an ordinary two-and-a-half inch wedge was forced between the middle pieces and driven home, would it be possible for the wedge to absorb just as much of the leather or boards as that of its own bulk, leaving no signs of upheaval or depression in the lines of contact between the pieces ? And yet this is what must have taken place if the roots grew in these beds.

The clearest proof of this may be seen in the uncompressed state of the Iris and other vegetable growth, as compared with the compressed state of the old growth.

Is it possible for a tree under any circumstances to fall where it has grown, and there remain in a comparatively sound state, whilst a soil derived from the ordinary growth and decay of vegetation shall accumulate around and over it ? Or is it possible for the engineer or carpenter to name a wood or tree of British growth which, in its natural state, would lie exposed on the surface soil for thirty years and not show the

least sign of decay? Or would a soil, derived wholly from the decay of normal vegetable growth, accumulate one inch in that period of time on a surface sufficiently drained for an oak to flourish on? Is it not a fact that the most indestructible of vegetable substances, if left on the surface of the earth exposed to atmospheric influences, will, in time, by decay become a portion of the soil?

But let us turn to water, and inquire as to its qualities or powers for preserving vegetable remains, and we shall certainly not need to travel beyond the lake dwellings of Switzerland for an answer. There, in the bed of the lakes are found the remains of man's handiwork, also delicate vegetable substances and portions of innumerable wooden piles, which are supposed to have formerly supported the dwellings of the people who placed them where they are now found.

Again, in the drainage of a lake or bog in this country it is not an unusual thing for canoes and implements of wood to be found, and such have been found imbedded in the forest peats —the handiwork of a people of whose history we know almost as little as we do of the fossil creatures of the older rocks. When peats are either naturally or artificially drained, we know that if they are exposed to atmospheric influences, the vegetation of which they are composed will decay; and it is from this source that the practical gardener obtains the decomposed peat soil so much desired for the growing of ferns and for potting purposes. Is it then unreasonable to assume as a fact, that when the timber and plants found in these beds, and which go to make up their thickness, are in an undecomposed state, they can never have been exposed to atmospheric influences, after being imbedded, until uncovered by recent denudation?

All these so-called forest beds which I have examined are overlain by a marine or estuarial deposit. As our knowledge of these formations increases, it will be interesting to ascertain

to what extent this overlying deposit is similar and continuous. Much of this work may be done by one individual; but before even an approximation to their geographical distribution can be ascertained, it must become the work of many. Buried several feet, as they mostly are, below the surface of the ground, except where exposed by tidal influences, their existence can only be guessed at in many instances; it is therefore the more necessary that where sections of these beds are exposed by drainage or other works, the full particulars should be chronicled.

There are those who, having abandoned the theory that the so-called forest-beds are of terrestrial origin, derived from the decay of forest-trees and vegetation which has grown on the surface, beneath the trees, admit that the beds in question are made up entirely of the growth of fresh-water plants and vegetation from which our ordinary peats are derived. Yet they cling to the theory of growth *in situ* with as much tenacity as the drowning sailor is said to have clung to a straw. Whether their new theory will assist them better than the straw did the dying sailor, we shall see.

They now assert that, after the first aqueous bed had been formed, an elevation of the land occurred, followed by the drainage and consolidation of the bed necessary for the germination and growth of the oak and of the other forest-trees whose outspread roots and standing butts are to be found in such vast numbers. Subsequently, a subsidence of the land occurred; the immense forests, with their noble trees, sunk beneath the waves of the sea; and a fine argillaceous marine mud was deposited over the surface of these forests. Then came an elevation—the sea was excluded and fresh water took its place, giving birth once more to plants peculiar to it and the peats; these accumulated until another elevation of the land took place; then again comes the period of consolidation and drainage; after which the seeds of forest-trees again find their

way to it, germinate, and grow into a finer forest than the one which preceded it. Is it possible for those who put forward this theory to imagine that the whole of the forest-tree trunks which are imbedded in these peats were derived from a forest which must have existed many centuries before these standing butts first sprung from the peat in which we find them? If their theory be correct, such must have been the case; as the aqueous vegetation of those beds could not otherwsie have accumulated around and above them, and it is equally impossible for them to have got there after the beds were consolidated. Then as it is impossible for these imbedded trunks to belong to the butts which have grown amongst and above them, what has become of the boughs and trunks which belonged to this *later forest?* For, if this theory be correct, nothing can be left of it, except the stools or butts with their outspread roots. Or, on the other hand, where are the roots and butts gone to, of the forest which must have existed previous to these peat-beds being formed, which have supplied the trunks found in them? But a fact exists which entirely disposes of this theory, which is that where the beds are thick enough, not only the roots but occasionally the whole of the butt is entirely covered, I having seen examples where the spade has disclosed their existence more than a foot below the surface of the undisturbed peat on the Cheshire shore.

I refrain from giving other facts in opposition to this theory, feeling certain as I do that twelve unprejudiced men could not be appointed to visit, examine and give an opinion on these tree remains, without agreeing in one unanimous verdict that they had all been derived from a common source, and all belonged to one period of time.

Having satisfied myself that the beds described owed their origin to aqueous, and not to subaërial or terrestrial causes, the question forced itself on my mind, Can the specimens of

man's handiwork, so plentifully found on this shore, be derived from those old and undisturbed aqueous formations, or have they been washed out from what has been, and still is, the cultivated surface soil inland from the sand hills.

To ascertain this, I commenced to search for and collect these relics of a bygone time, making it one of the principal considerations that, when I purchased from the residents of the district, the vendor should inform me of the exact spot on which the object was found, and all particulars connected with the fact. By these means, and by personal research, I became convinced that my first surmise was correct, a conviction which the lapse of years, and the obtaining of many hundred specimens, have tended to confirm. I had not been long collecting when I perceived that the coins belonging to the reigns of Edwards I., II. and III. were the most numerous of any coins discovered. And it was puzzling that the coins of Queen Elizabeth, which are usually the most plentiful (the current coins excepted), should appear to be altogether wanting. This became the more apparent as coins representing the Norman, Saxon and Roman periods came to hand with objects of the stone age, and caused me to conclude that some catastrophe at the close of the fourteenth century had occurred to depopulate this neighbourhood and turn the tide of migration from it. It was not until I was in the act of preparing this paper that I was aware of the learned author of *Ancient Meols* having arrived at the same conclusion. At page 289, in speaking of the relics found on this shore, he says: "The great bulk of our heterogeneous series will be "found to appertain to the thirteenth century, hence the "induction that the settlement then attained the height of its "prosperity. From this period its decline appears to have "been rapid, pointing to some great flood or other disaster."*

* When this paper was being read, Canon Hume stated that the honour of first observing and describing this fact was due to Mr. H. Ecroyd Smith.

It is with extreme pleasure that I make this quotation, as my first speculations led me to suppose that drift-sand, by subaërial agency, had been the cause, which observations of a later date proved to be erroneous, as my discovery of the fresh water and ferruginous beds abundantly proved. These beds have been named by Mr. De Rance "*Bithinia Tentaculata* sand." I would have preferred that they should have borne the name of "*Succinea Putris* sands," as, from the great abundance of the latter, and the great scarcity of the former, they would by that name be more readily recognized. I had, previous to the ordnance survey, brought these and the Upper *Scrobicularia* beds under the notice of the Liverpool Geological Society, with the hope that they would investigate and name them. As the society failed to do this, I adopt Mr. De Rance's naming, as it indicates a fresh-water origin.

It must not be supposed that coins of a later date than the fourteenth century are not to be found in the *neighbourhood* of the Cheshire shore. I have obtained a few of Elizabeth's; some of the later Scottish kings, including James the first of this country; the Charleses; James the second; and William and Mary. From the well-known fact of William of Orange having himself embarked, with a portion of his army, from Hoylake, for the invasion of Ireland, it may naturally be supposed they would leave many relics of that enterprise in and around the neighbourhood. On close inquiry, I have found that every coin I possess of these later reigns, and the relics left of William's army, have come from the higher and cultivated lands of Great Meols, or westward from Great Meols to Hilbre and West Kirby.

What time was necessary, or occupied by the formation of the Bithinia or ferruginous beds, may prove to be one more of those fertile causes of speculation never to be satisfactorily answered. But the ground over which I have traced them along

the Cheshire shore, and their existence on the Lancashire coast,—as subsequently shown by Mr. De Rance and Mr. Mellard Reade, F.G.S.,—show that the floods which gave rise to these beds must have covered a vast extent of country, and point to the probability of considerable land changes within a comparatively recent period. It having been proved by actual survey that three thousand acres of land abutting on the Cheshire shore are now below the level of an ordinary spring tide, it must be evident that for beds to be deposited at least eight feet above that level, the extent of country covered by water must have been of much vaster dimensions. Supposing the Cheshire and Lancashire beds to have been deposited simultaneously, is it possible that water could stand eight feet above the level of an ordinary spring tide at the mouth of an estuary like that of the Mersey, or on a shore like that of Cheshire? If it is not, we may conclude that the tidal waters must have been separated from the flood waters by higher land than now exists in many places, or the land must have extended much further seawards, and with it the estuary of the Mersey and the mouth of the Dee.

Having heard much speculation and discussion regarding the circumstances under which the relics washed from the surface soil at Great Meols had been deposited, I venture to submit the following as my own opinion on the subject. Previous to the flooding of the lands described, I take it that there is evidence of habitations in the numerous relics, and in the remains of ancient dwellings, three or four of which I have had the opportunity of examining immediately after their exposure by heavy storms and spring tides occurring at one and the same time. The floors are made of puddled clay derived from the lower *Scrob.* clay. What remains of the walls, which in one varied from nine to fifteen inches in height, shows that they were made of wood framework, filled in with puddled clay similar

to the floor, the puddle being worked up to a good smooth surface.* The perpendicular timbers of the framework were supported on long irregularly-squared blocks of sandstone, two of which had holes cut into their surface for the foot of the timber to rest in. The floors in all cases which I have examined are raised above the surface soil to a height varying from a few inches to fully two feet, each being considerably below the *Bithinia Tentaculata* beds. These beds appear to speak like truthful witnesses to at least one cause of the depopulation of the district. It can scarcely be questioned but that the resident population would be supplemented by a migratory population, which made the neighbourhood of the mouth of the Dee a place of embarkation and debarkation in passing to and from Ireland, or to the westward. This moving population would often be delayed by miscalculation, storms, or contrary winds preventing their departure. During the time of waiting there would probably be a considerable amount of camping out on the dry sandy soil of the district, and the sports and pastimes of those days would be freely indulged in to dispel the tedium which oppresses all, in a greater or lesser degree, who are anxiously awaiting the consummation of an object or desire. As stated previously, the finds on this shore prove that every period of time, from the flint or stone age to the commencement of the fifteenth century, has had its representative in the neighbourhood of Great Meols. And although many thousands of objects have been secured within the last forty or fifty years—making an average, as computed by the author of *Ancient Meols* of one hundred and fifty specimens a year, a computation which my own experience bears out—when the quantity of what has

* There may occasionally be seen in the lower *Scrob.* bed long, narrow drain-like cuttings, filled with peaty materials. There can be but little doubt but that these are the places from whence the clay has been obtained, which has been used for puddling purposes.

been cultivated soil is computed, which has by the wasting of the shore been removed during the last forty or fifty years, the surprise is, considering the careful manner in which these relics have been sought for, that in number they should be so few.

These objects are found at the present time distributed over a length of shore exceeding a mile and a half. And this length is much contracted, compared with what it was during the earlier years of collecting, by the measures taken to protect the land from further encroachments of the sea. The average waste of this shore where unprotected, being at the rate of three yards per year, if we compute the surface soil at only one foot in thickness, which will be very much below the average, it will be found that not more than one specimen is sifted out from seventeen and a half cubic yards of soil; a fact which puts the old saying of the hopelessness of looking for a needle in a load of hay completely into the shade.

Since this paper was read, some very fine sections of beds, corresponding to those on the Cheshire coast, have been exposed on the Lancashire shore at Bootle, in excavations being made for new docks, by the Mersey Docks and Harbour Board.

The peat-beds at Bootle were much thicker than on the Cheshire shore; the trunks and butts of enormous forest trees were to be seen through the whole thickness of the beds, the imbedded trunks being often under the outspread roots of the butts. In very few cases did the tops of the butts project above the peat. They were for the most part completely imbedded; in some instances the uninterrupted peat formation being several feet in thickness above the butts.

The *Scrobicularia* clays at Bootle have produced, in addi-

tion to such remains as have been found in the corresponding beds on the Cheshire coast, a bear's skull, in a fine state of preservation; which, with some bones of *Cetacea* and *Bos longifrons*, are now the property of the town, and deposited in the Free Public Museum. From a small quantity of silt kindly taken from the bear's skull by Mr. T. J. Moore, the curator of the museum, the following *marine* forms have been determined and mounted by the Rev. H. W. Crosskey of Birmingham:—*Nonionina striatopunctata; Cythere pellucida; C. castanea; Lagena sulcata; Nucula tenuis; Rissoa parva; Mactra solida; Tellina Balthica;* with many spines of echinoderms and fragments of mollusca. The slides on which the specimens mentioned are mounted are now, by the kindness of Mr. Crosskey, given to the museum to be placed with the skull.

A THEORY AS TO THE ORIGIN OF ARABIC NUMERALS.

By B. L. Benas, Esq.

(Read 10th February, 1876.)

It is related of an old Arab, that—living in a town divided by a river, which settlement had grown from an obscure village into a flourishing community, with temples, schools, hospitals, baths, fountains, and all the accompaniments of an opulent state of society—he had only one favourite ejaculation. And that was, "Blessed be the man that built the bridge, for all our "wealth and prosperity have been derived from that construc-"tion." Like the old Arab one might be tempted to exclaim, "Blessed be the man who invented numerals, for all our "progress in real civilization dates from their adoption."

It is almost impossible to imagine what really would take place, in the routine of the world's daily operations, if we suddenly lost the magic symbols,

1 2 3 4 5 6 7 8 9 0

A statesman could no more obtain his statistics for equitable taxation; our scientific operations would be at a standstill; the merchant would be reduced to the petty trader; the quotations of the stock exchange would cease to trouble us; and the weary banker would be at rest.

Let us imagine for a moment an Addition sum in Roman numerals, thus:—

D
XIV
CCX
XXXV
XCI
M
XLVI

It will be seen at once how huge a labour so trivial a thing must have occasioned ; and it seems to us simply marvellous how the great Roman empire could have attained its comparatively high state of civilization when every little operation must have necessitated a feat of mental arithmetic.

Uncharitable though it be, we are accustomed to look down upon the Mahommedan Arabs as a nuisance in Europe, to whom we owe nothing, and who are only to be ejected, " bag and baggage," from all contact with our superior civilization ; and the less informed would hardly credit that when the torch of learning burned very feebly in all the rest of Europe, there was one corner in the Iberian peninsula, occupied by the Arabs, where geography, history, philosophy, medicine, physics, mathematics, and especially its congeners geometry and arithmetic, were sedulously cultivated. Indeed the terms almanac, algebra, alcohol, azimuth, zenith, nadir, and chemistry, are all derived from their language, and are indelible landmarks of their mental activity.

There have been various opinions as to the effect of the so-called Crusades, or " holy wars," upon the Christian people. Some maintain that these intensified the religious zeal of the various populations, and that the benefits of self-sacrifice were brought to the surface by an heroic devotion to a cause not immediately for their own interests. Others, less sentimental, have agreed that the Crusaders were a perfect nuisance to all the quiet and peaceful portion of the then constituted social order in society ; that they were, with a few truly noble exceptions, a lot of " ne'er-do-weels" and vagabonds, who would have enlisted in any cause that brought license and adventure in its train, and that their friends had more to fear and to lose from their depredations than from those of their avowed enemies. Suffice it to say that this contact of the West with the East has left good and tangible results. Among the many importations from the Saracens, there

can be no doubt that the use of the Arabic numerals is one of the most important of all; and the great advances in all our modern scientific attainments are not a little to be traced to this beautifully perfect decimal system of notation, whereby, with ten cyphers, endless arithmetical combinations can be perfected.

And now, as to the origin of these symbols. It is evident the Arabs did not invent, though they used, them. Modern researches in Egypt, and especially among the hieroglyphics, have satisfactorily demonstrated to us that in that cradle of all the arts and sciences, these figures were to be found. Professor Seyfforth, who some time ago made extensive searches and collected some valuable papyri, (preserved now in the museums of Florence and Turin,) shewed not only these figures in use among the priests of Egypt, but also found that this ancient race knew a good deal about decimals and fractions. And it may be inferred, that, as all learning was the exclusive property of a privileged caste, so with the extinction of that caste the knowledge was lost to the people. Whether the Aaronic priesthood of the Jews carried this invention with them from Egypt, and used it in common with the seventy elders for the sole purpose of enabling them to govern the people, may be a bold speculation. It is known that all the traditions embraced in the Mishna and Gemara were for many centuries,—nay, for thousands of years,—transmitted from generation to generation, orally, it being distinctly forbidden to commit them to writing; until the Sanhedrin, or the unbroken link of the seventy elders (whose legislative chain of authority, beginning in the wilderness, imposed upon them by Moses, remaining intact after the destruction of the temporal power of the Jews), fearing the possible loss of these traditions altogether, at length committed certain portions to writing.

No trace, however, is found in these Talmudic compilations that the decimal system was in use among the ordinary Jewish

people; though the minutely correct astronomical calculations in the calendar framed by the Sanhedrin, leads one to imagine that they must have availed themselves of a numerical system much superior to that in common use. Again, there is an undercurrent of the decimal system pervading all the measures of the scriptural period. We find the omer is the tenth of an ephah, the shekel the hundredth of a maneh, the tithe the due of the priesthood; hence the idea, that our present system of numerals might have been known to the leaders of the Jewish people, may not be so unpardonably extravagant.

A very ingenious theory, as to the origin of the shape of the figures in our present system, I found in an old manuscript volume, which was exhibited by me to the Historic Society of Lancashire and Cheshire. It is written partly in Hebrew and Latin, by one of my ancestors, who was exiled from Spain in the latter end of the 15th century, on account of nonconformity to the religion of the State. It has the appearance of a literary gentleman's common-place book, the author evidently a physician, from the references to medicine absorbing the larger share of the folio. In a portion devoted to mathematics the writer observes:—"The patriarchs did not use round "cyphers as we do to-day, but angular ones. These were all a "combination of a square [or rectangle] contained within a "circle, the figure containing four isosceles triangles, thus:—

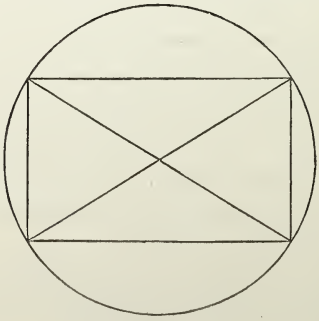


Diagram No. 1.

The cyphers are formed from this as follows :—

The base of a triangle.

Two acute angles.

Three acute angles.

A triangle with two extended bases.

Two acute angles, the same as the figure (two) reversed.

A triangle with one extended base.

An acute angle.

Two triangles.

A triangle with one extended base.

The square.

It will be seen that all these cyphers are contained in Diagram No. 1, and, with very little variation, are similar to our

1 2 3 4 5 6 7 8 9 0

I have never seen this theory, as to the origin of the Arabic numerals, in any treatise on this subject, and was on the point of declaring the idea an original one; but upon bringing this

subject before the Historic Society of Lancashire and Cheshire, Mr. Gatty, of the Free Public Library, stated that, in a work on Runic Remains, entitled the *Ocra Linda Book*, a similar origin is given. If this theory, however, is the correct one, it is far too little known, and the writer of the paper will be glad if the publication which the Transactions of this Society will give to this subject, causes a discussion as to the actual origin of these really invaluable cyphers, which we know under the name of Arabic numerals.

ON THE INACCURACIES WHICH PROBABLY EXIST IN THE CENSUS RETURNS OF AGES.

By Thomas A. Welton, F.S.S., &c.

(Read March 9th, 1876.)

Some years ago, before the publication of the third volume of the Census of England and Wales, 1871, I was anxious to calculate the approximate death rates in particular parts of England, amongst females at certain ages, during each of the years 1851—1870. I therefore applied myself to the preliminary process of estimating the population in each year at the ages in question.

I found that it was not safe to assume that, if population in a given county or district had increased generally, at a certain rate, there had been an increase at each particular age at something like the same rate. On the contrary, there was a surprising irregularity in the respective rates of increase or decrease observed amongst persons of the several ages in the same population.

Table I shows the rates of increase in the numbers enumerated at each age up to 80 amongst males and females respectively in the several registration divisions, and in England and Wales. On inspecting this table, it will be seen that, partly owing to the effect of emigration, the ratios of increase at particular ages are very diversified. In the Eastern Counties males aged 20—25 decreased by nearly one-tenth, but males aged 65—70 increased by nearly a quarter. In the same division, females aged 25—30

decreased by almost 5 per cent., whilst females aged 40—45 increased by more than 15 per cent.

Such being the state of the facts, I abandoned all thought of deducing from the total numbers enumerated in 1871 any reliable estimates of the numbers at particular ages, unless indeed some other mode of treatment of the figures could be found leading to more regular results.

On comparing with the population enumerated in 1851 the numbers, ten years older, found to be living in 1861, I obtained other sets of ratios, which are shown in Table II.

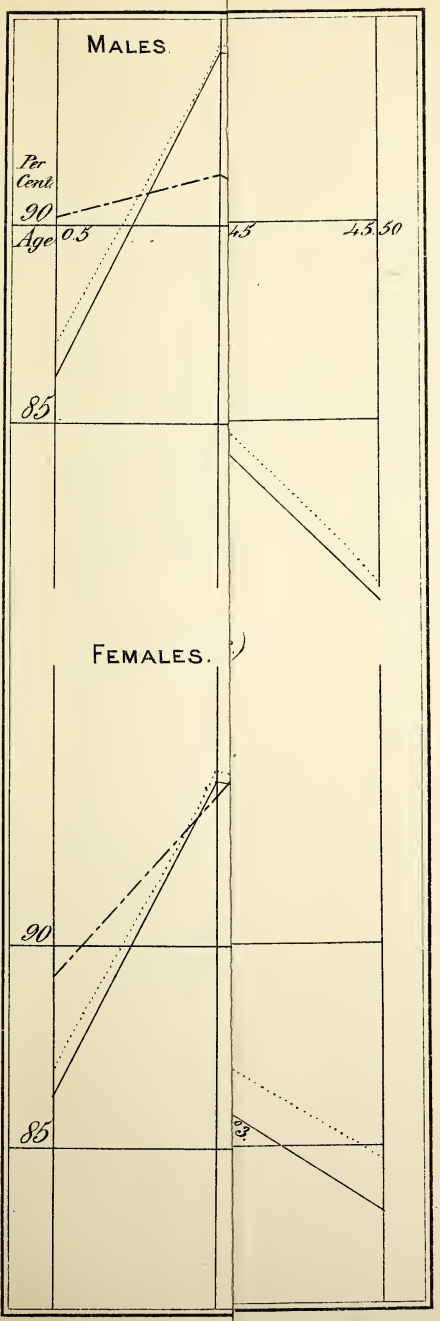
The following is a comparison between the proportions for England and Wales, shewn in Table II, and the numbers out of 100 living in 1851 who would have survived in 1861 according to the English Life Table No. 3.

Ages in 1851.	Proportion of survivors out of 100 living in 1851.			
	By the Census.		By the Life Table.	
	Males.	Females.	Males.	Females.
0— 5*	90·1	89·2	86·4	86·7
5—10	91·2	93·5	94·2	94·0
10—15	89·2	102·1	93·7	93·4
15—20	84·1	94·4	92·0	91·6
20—25	83·2	83·2	90·9	90·4
25—30	84·4	82·3	89·9	89·6
30—35	89·2	88·6	88·6	88·6
35—40	85·1	85·9	86·8	87·4
40—45	82·3	83·8	84·3	85·9
45—50	76·1	77·6	80·5	83·2
50—55	76·7	80·2	75·3	78·2
55—60	68·9	74·1	67·7	70·7
60—65	56·5	60·2	56·9	60·3
65—70	47·3	50·5	43·5	47·2

The emigration of females of English birth has by no means been on an insignificant scale, at any time since 1851; but owing to the immigration of large numbers of women from Ireland, Scotland, and foreign parts, the net loss has been only moderate. We should therefore be justified in looking for a certain correspondence between the proportions

* This should be read "0 and under 5."

PROPORTION 50 & 162.



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10—15	89·2	102·1	93·7	93·4
15—20	84·1	94·4	92·0	91·6
20—25	83·2	83·2	90·9	90·4
25—30	84·4	82·3	89·9	89·6
30—35	89·2	88·6	88·6	88·6
35—40	85·1	85·9	86·8	87·4
40—45	82·3	83·8	84·3	85·9
45—50	76·1	77·6	80·5	83·2
50—55	76·7	80·2	75·3	78·2
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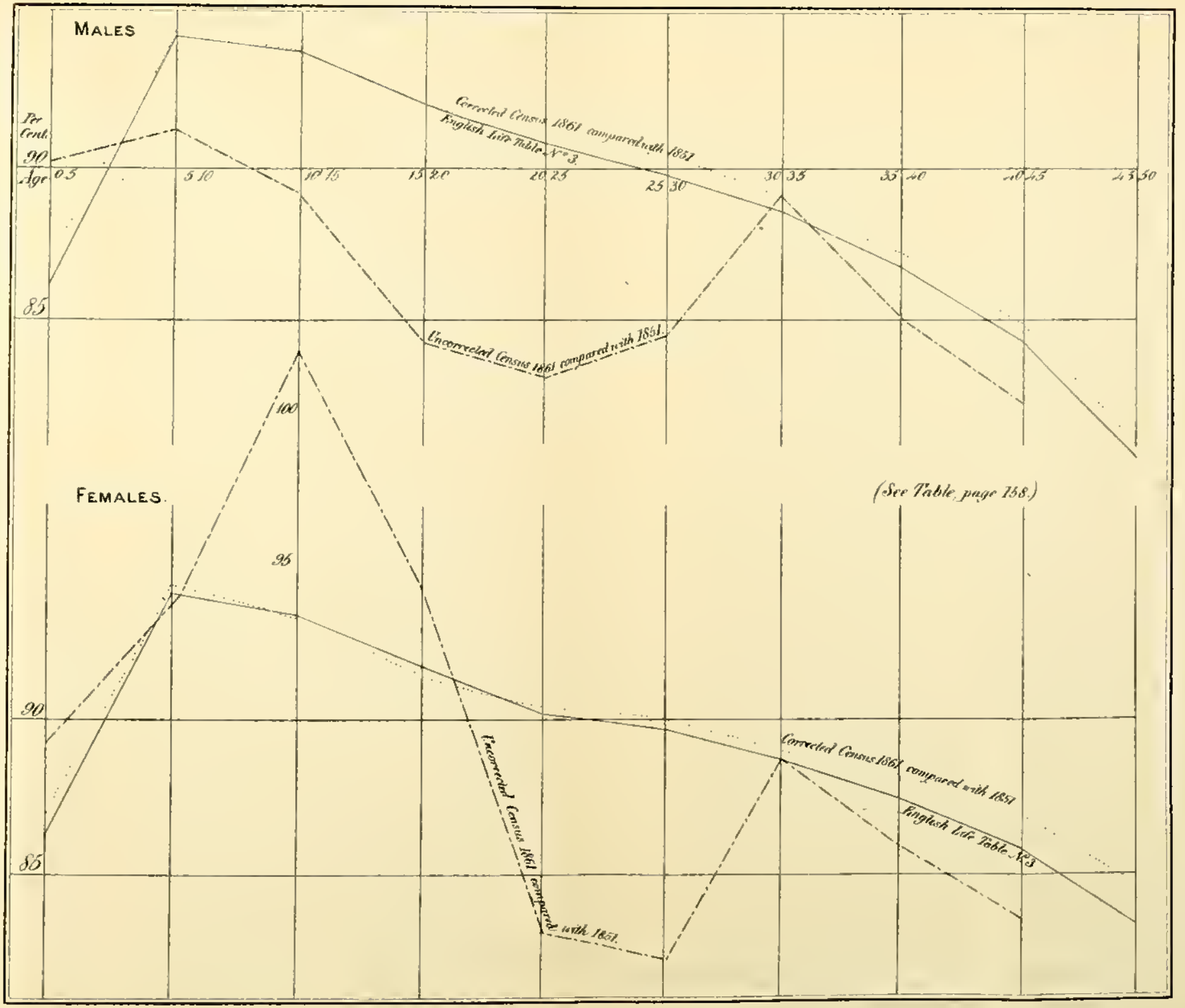
Diagram Shewing

Proportion of Survivers after Ten Years Time. *Vide* – Tables of Proportions on Pages 150 & 162.



of females who might be expected to survive, according to the Life Table, and those proportional figures which represent a comparison of the census figures of 1861 with those of 1851. In point of fact, we discover that, at ages 10—20, the proportions who should survive the next ten years, according to the Life Table, are far exceeded by those who apparently do survive; and this state of things in the next ten years is reversed. So that the figures suggest a faulty return of the ages of the female population, exaggerating the numbers aged 20—30, and perhaps depressing those aged 30—40.

Again, we have reason to believe that some of the children under five years old are returned as being fully of that age, whilst next to none who have attained five years of age would be returned as being younger. This would account for the dissimilarity of the ratios of survivors at the earliest period of life.

By assuming, as experimental suppositions, that the proportionate errors in the censuses of 1851 and 1861 at each age were equal, and that female emigration and immigration neutralised each other, I obtained a set of corrections of the census enumerations of females which indicated that there was a tendency in the case of young persons under twenty to exaggerate their ages, but that women aged 25—30, and at each successive quinquennial period of life, at least up to 55—60, had a tendency to understate their ages. There was likewise a certain disposition to return ages in round numbers of years, though this was far less remarkable than in the Irish census of 1851, from which the following figures are taken.

Age returned.	Males.	Females.
35 and under 40	150,471	165,966
40 „ 45	187,410	217,986
45 „ 50	109,618	117,345
50 „ 55	156,337	176,782
55 „ 60	73,511	79,111
60 „ 65	100,963	130,740

The understatement, at the ages mentioned, appeared to have been no greater in this country than would have resulted from *every woman*, aged 25—60, calling herself one year younger than her true age.

It will be obvious how great the utility of censuses taken at intervals of *five* years would be, in enabling us to measure more accurately the results of these tendencies to mis-state ages, and particularly the effect of ages being returned in round numbers.

The corrections applicable to the returns of males could not be even approximately determined without taking into account the effects of emigration upon the numbers of that sex. And as the rates of mortality are subject to considerable variation, year by year, I came to the conclusion that more reliable results must be sought by the aid of—

(1) Estimates of the numbers of the *recorded* deaths which happened amongst persons *born* in each quinquennial period.*

(2) A computed allowance for unregistered births in excess of the unregistered deaths of infants.

(3) Estimates of the loss or gain of population through migrations at each age.

Table III exhibits the results obtained by computing the first and second of these elements, and showing the remaining difference between the two sets of census figures, as the combined result of migrations and errors.

On examining this table, I thought it extremely probable that the numbers of deaths at high ages were exaggerated, because I know of no reason for supposing that the census numbers at such ages are less than the truth; and if they are equal to or more than the real numbers of the living, we are

* These estimates have been made upon the basis of an apportionment derived from a consideration of the "English Life Table No. 3;" but I refrain from going into a detailed account of the process, for fear of rendering this paper more prolix and uninteresting than its character necessitates.

compelled to conclude either that there is a considerable immigration of old people, or, what seems much more compatible with such knowledge as we possess, a tendency exists to exaggerate the ages both of the living and the dying amongst those who are over seventy years old.

By the aid of the "English Life Table No. 3" it was ascertained that in a population resulting from births increasing at 1 per cent. per annum, the following numbers would represent the proportions of persons living and dying at high ages :—

Ages.	Living.		Ages.	Living.		Proportion of the former to the latter.	
	Males.	Fem'l's.		Males.	Fem'l's	Males.	Fem'l's.
						as 100 to	as 100 to
75 & under 80..	373054	428741	74½ & under 79 ..	369162	420783	99·0	98·1
80 „ „ 85..	174287	213540	79 „ „ 84 ..	207496	250662	119·1	117·4
85 „ „ 90.	59641	79253	84 „ „ 89 ..	76091	99340	127·6	125·3
90 „ „ 95..	13652	20037	89 „ „ 94 ..	19023	27331	139·3	136·4
95 „ „ 100..	1887	3119	94 „ „ 99 ..	2934	4728	155·5	151·6
100 & upwards..	145	279	99 and upwards..	260	484	179·3	173·5

Ages.	Deaths.		Ages.	Deaths.		Proportion of the former to the latter.	
	Males.	Fem'l's.		Males.	Fem'l's.	Males.	Fem'l's.
						as 100 to	as 100 to
75 & under 85..	78695	84957	74½ & under 84 ..	79184	84673	100·6	99·7
85 „ „ 95..	19617	24868	84 „ „ 94 ..	24024	29893	122 5	120·2
95 & upwards..	932	1476	94 and upwards..	1393	2152	149·5	145·8

From the above table it may be deduced that, supposing persons aged 71—75 call themselves (or are described as being) on an average six months older than their true age, and if after 75 the exaggeration averages an entire year, a very great impression must be thereby made upon the returns.

Having arrived thus far, I thought it would be convenient in the first instance to try whether these suggestions, which I imagine will be deemed moderate and probable, would suffice to explain the apparent influx of aged persons, shown in Table III; and whether other suppositions, not less reasonable, would serve to overcome the remaining difficulties which appear on the face of that table.

The female population being least disturbed by migrations, the necessary calculations were made in relation to it, before proceeding further. First, the deaths shewn in Table III had to be modified, as follows :—

Born in the years	Deaths of Females as in Table III.		As now Corrected.	
	1851—60.	1861—70.	1851—60.	1861—70.
1801—05.....	65030	97481	65030	98802
1796—1800....	72028	108636	72028	112636
1791—95.....	82975	114233	84226	118269
1786—90.....	93843	105704	97626	107225
1781—85.....	99612	78080	103438	76172
1776—80.....	94274	43589	95728	39172
1771—75.....	71487	17466	69678	14330
1766—70.....	40514	4849	36401	3732
1761—65.....	16604	894	13613	617
1756—60.....	4724	73	3631	50
1751—55.....	921	—	636	—
1746—50.....	76	—	53	—
Totals....	642088	571005	642088	571005

Then it was necessary to make some assumptions as to the effect of migrations of females into and from this country, and the following estimates were provisionally adopted :—

Estimated Average Annual net Result of Migrations.					Consequent Estimate of net Loss or Gain in 10 Years.‡				
Age (at end of the year of migration)	1851—60.		1861—70.		Age (at the end of the decennium)	1851—60.		1861—70.	
	Immigrants.*	Emigrants.+	Immigrants.*	Emigrants.+		Net loss.	Net gain.	Net loss.	Net gain.
0—5..	2000	3250	1550	2675	0– 5..	3750	—	3375	—
5—10..	2000	3000	1530	2450	5–10..	9250	—	8385	—
10—15..	2800	2280	2170	1900	10–15..	6000	—	6040	—
15—20..	5300	3150	4200	2740	15–20..	—	7000	—	3890
20—25..	2400	3900	1860	3200	20–25..	—	7300	—	3820
25—30..	1050	2700	800	2190	25–30..	8150	—	7950	—
30—35..	630	1630	500	1340	30–35..	14250	—	12150	—
35—40..	400	1050	320	870	35–40..	10250	—	8630	—
40—45..	390	690	320	590	40–45..	6150	—	5240	—
45—50..	280	520	210	420	45–50..	3500	—	3080	—
50—55..	190	420	145	345	50–55..	2500	—	2190	—
55—60..	100	250	75	200	55–60..	2000	—	1795	—
					60–65..	1200	—	1025	—
Totals..	17540	22840	13680	18920	65–70..	300	—	250	—

* Net gain of incoming Irish, foreigners, &c., in excess of those departing.
+ Net loss of English-born Emigrants, in excess of English returning home.
‡ This is framed on the assumption that the migrations in each year were exactly alike in number.

No great confidence can be placed in these last calculations as to the effect of migrations at particular ages. The facts bearing on the subject preserved in official records with which I am acquainted are but scanty. The rough, general idea which may be gathered from the table does, however, approximate more or less closely to the truth, and may be usefully contrasted with the violent fluctuations indicated in Table III. These shew, in the midst of their extravagance, a kind of regularity at particular ages, thus--

Age at end of Decennium.	1851-60.		1861-70.	
	Loss.	Gain.	Loss.	Gain.
0— 5	30575	...	42643	....
5—10	....	3937	....	15075
10—15	....	24995	....	29722
15—20	7416	....	14314	....
20—25	....	85027	....	73654
25—30	....	27678	....	42046
30—35	69827	.. .	74590	....
35—40	63559	....	54880	....
40—45	4438	....	7513	....
45—50	11175	....	11472	....
50—55	16118	....	18811	....
55—60	26073	....	28220	....
60—65	....	35	1360	....
65—70	....	12614	....	18345
70—75	7310	....	7982	....

Finding it quite impossible to believe in the successive migrations which must have taken place, if this extract from Table III represented the truth, I pursued the enquiry as to what is the alternative of such a belief.

Proceeding to calculate what corrections must be made in the census returns of the numbers of females, if the amended estimates of losses by death and the calculated results of migrations be adopted, I first assumed that each of the three censuses of 1851, 1861, and 1871 might be rendered erroneous by misstatements as to ages in *fixed proportions* at the several periods of life.

The endeavour to find such a fixed scale of proportions as

would rectify all the censuses was, however, unsuccessful; and it became evident that the deviations from the truth were greatest in 1851 and least in 1871. Three scales of proportions were then arrived at empirically, embodying the idea of diminishing degrees of error. In the course of the researches made for the sake of adjusting these scales, I found reason to believe that the allowances for unregistered births in the years 1856-60 and 1861-65 should be increased by $\frac{1}{2}$ per cent. That addition having been made to the estimated numbers of births, it became requisite that equal numbers should be added to the estimated losses by emigration; and by finally amending the three scales of proportions in conformity with these alterations, the results shewn in Table IV were at last arrived at.

These results require us to believe that, whilst our calculation of the effect of migrations in 1851-60 was near the truth, the similar estimate for 1861-70 was rather beside the mark. The numbers now required to be substituted, however, appear to me to be acceptable, especially when we have regard to our inability to form any opinion as to the ages of those persons of English birth who returned in large numbers from the United States about the time of the war of secession.

The next thing to do was to ascertain what transpositions of the census figures are involved, in case we accept the numbers shewn in Table IV as being approximately correct.

Table V exhibits these transpositions, and it will be seen that they lead to the conclusions shewn in the following statement:—

STATEMENT A.—Shewing the proportions (per cent.) of female population returned at each age, who were really older or younger than represented.

Returned as aged	1851.*			1861.			1871.		
	Really older.	Age correct.	Really y'nger.	Really older.	Age correct.	Really y'nger.	Really older.	Age correct.	Really y'nger.
0— 5	..	100·0	..	..	100·0	..	..	100·0	..
5— 10	..	97·0	3·0	..	97·1	2·9	..	97·3	2·7
10— 15	..	98·1	1·9	..	98·1	1·9	..	98·2	1·8
15— 20	..	97·4	2·6	..	97·9	2·1	..	98·0	2·0
20— 25	4·7	92·3	3·0	5·3	92·4	2·3	4·8	93·2	2·0
25— 30	9·8	90·2	..	10·3	89·7	..	9·5	90·5	..
30— 35	13·3	86·7	..	13·5	86·5	..	11·5	88·5	..
35— 40	12·6	87·4	..	12·6	87·4	..	11·9	88·1	..
40— 45	16·5	83·5	..	16·1	83·9	..	15·3	84·7	..
45— 50	15·1	84·9	..	14·6	85·4	..	13·9	86·1	..
50— 55	16·5	83·5	..	16·5	83·5	..	15·5	84·5	..
55— 60	8·4	91·6	..	8·2	91·8	..	7·2	92·8	..
60— 65	9·0	91·0	..	8·8	91·2	..	8·1	91·9	..
65— 70	1·7	98·3	..	2·0	98·0	..	1·8	98·2	..
70— 75	..	100·0	..	·3	99·7	..	·5	99·5	..
75— 80	..	99·9	·1	..	100·0	..	..	100·0	..
80— 85	..	91·6	8·4	..	92·6	7·4	..	93·2	6·8
85— 90	..	90·5	9·5	..	92·1	7·9	..	93·1	6·9
90— 95	..	84·2	15·8	..	85·6	14·4	..	88·7	11·3
95—100	..	62·2	37·8	..	62·5	37·5	..	68·1	31·9
100 & up.	..	38·0	62·0	..	38·4	61·6	..	50·4	49·6

The ratios in the above statement signify that at no time of life does the apparent *under statement* of age average so much as an entire year†; and the exaggeration even at high ages also appears to average less than a year, so that there is, I think, no such unlikelihood about the figures as should lessen their credibility. When the irregular results of Table III for females are compared with the much more probable results shewn in Table IV, and the assumptions by which the latter were arrived at, and through the adoption of which the registered births and deaths, the returns at successive censuses of the numbers of the female population at several ages, and the computed losses by migration have been brought into

* It will be noticed that some of the ratios of inaccuracy attributed to the census figures of 1851 are lower than those for later censuses. These exceptions to the rule of decreasing inaccuracy might be removed without any very violent disturbance of the estimates shewn in Table IV, but it is thought scarcely requisite to do so.

† The percentage would be 20·0 (more or less), except at high ages, for each year of error.

close agreement, are considered, I think it will be seen that it is very much safer to adopt my corrections than to rely on the actual returns.

As the operation by which the age-returns are to be corrected is essentially one of transposition, I suppress the ratios upon the footing of which I constructed Table IV, and would employ the proportions shewn in Statement A, in applying similar corrections to the population returns in detail. In the absence of any means of judging what variations there may be in different parts of the country in the extent of the misrepresentations as to ages, I should be inclined to make use of these proportions in every case, though not without apprehending that inaccuracies of some consequence may thus be fallen into.

One more test may be applied before we finally adopt the figures exhibited in Table IV as representing (very nearly) the true female population. The ratios borne by the population there shewn to exist in 1861 and 1871 respectively, *plus* emigrants, to the numbers ten years earlier, may be computed and compared with those already shewn, which were derived from the English Life Table No. 3, thus :—

Age at the end of the ten years.	Proportion of survivors (including emigrants) out of 100 Females who were living 10 years earlier.		The like proportion, according to the English Life Table, No. 3.
	According to corrected figures, 1851 and 1861.	According to corrected figures, 1861 and 1871.	
10—15	87·4	87·5	86·7
15—20	94·2	94·7	94·0
20—25	93·2	93·7	93·4
25—30	91·4	91·9	91·6
30—35	90·5	91·0	90·4
35—40	90·0	90·1	89·6
40—45	89·0	89·1	88·6
45—50	88·3	88·2	87·4
50—55	86·8	86·8	85·9
55—60	84·7	84·6	83·2
60—65	80·2	79·5	78·2
65—70	72·7	72·4	70·7
70—75	61·6	61·3	60·3
75—80	47·1	46·9	47·2

On examining the ratios thus obtained, it will be seen that they harmonise well with the probability shewn by the Life Table. Each set of ratios is symmetrically graduated, whilst the proportions obtained by the use of the uncorrected Census Tables were, as has already been observed, by turns exaggerated and depressed.

Having thus arrived at a sufficiently near approximation to the truth in the case of females, it remains for us to endeavour to do the same in that of males. The effect of emigration must be first computed, which may be done thus :—

Age at end of the year of migration.	1851—60.		1861—70.	
	Immigrants from Ireland, &c.	English Emigrants.	Immigrants from Ireland, &c.	English Emigrants.
0— 5.....	2000	3500	1500	2200
5—10.....	2000	3500	1500	2200
10—15.....	3000	3000	2200	2000
15—20.....	6000	6500	4200	4000
20—25.....	2500	9000	1750	6000
25—30.....	1000	8000	750	5000
30—35.....	500	5000	400	3400
35—40.....	500	3000	350	2100
40—45.....	400	1850	260	1200
45—50.....	300	1300	200	800
50—55.....	200	1000	150	600
55—60.....	100	700	100	440
Totals	18500	46350	13360	29940

The above figures are based on an augmented estimate of unregistered male births, to correspond with the increased estimate of unregistered female births used in compiling Table IV.

The total loss or gain of male inhabitants at each age, resulting from the above migrations, might possibly have been as under, assuming the course of events to have been quite unvarying year by year :—

Age at close of decennium.	Net Loss.		Age at close of decennium.	Net Loss.	
	1851—60.	1861—70.		1851—60.	1861—70.
0— 5....	4500	2100	35—40....	44000	28750
5—10....	12000	5600	40—45....	25850	17570
10 - 15....	10500	4300	45—50....	15250	10000
15—20....	4500	*200	50—55....	10300	6230
20—25....	22000	11350	55—60....	7800	4470
25—30....	54500	33600	60—65....	4600	2600
30—35....	61500	38750	65—70....	1200	680
			Totals ..	278500	165800

As, however, those who departed in the earlier years of the decennium 1861—70 for the United States, may, to a great extent, have returned home, as well as many of those who had previously left the country, it seems natural to suppose that the emigrants of 1861—70 were, on the whole, much younger than the above Table would shew.

The result of a careful study of the various figures has been to convince me that the ages of male children, as well as those of female children, are overstated. At the age 15 and under 20 males do not appear to exaggerate their ages so often as females do. From 25 to 70 there seems to be a general but slight tendency to understate age, to the extent, on an average, of a quarter or at most nearly half a year. After 70, the same tendency to exaggerate age, which was noticed in the case of females, seems to prevail.

In Tables VI and VII are contained the same approximate facts respecting males, as are furnished by Tables IV and V for our female population. The figures of all these statements have been arrived at empirically, but so as to involve the most moderate and regular corrections which will meet the difficulties of the case.

The resulting proportions of supposed accurate and in accurate returns at each age may be thus shewn :—

* Net Gain.

STATEMENT B.

Shewing the proportions (per cent.) of male population returned at each age, who were really older or younger than represented.

Returned as aged	1851.			1861.			1871.		
	Really older.	Age correct.	Really y'nger.	Really older.	Age correct	Really y'nger.	Really older.	Age correct.	Really y'nger.
0— 5	..	100·0	..	..	100·0	..	..	100·0	..
5— 10	..	97·0	3·0	..	97·1	2·9	..	97·3	2·7
10— 15	..	98·8	1·2	..	98·3	1·7	..	98·3	1·7
15— 20	..	99·1	·9	..	98·3	1·7	..	98·2	1·8
20— 25	1·0	98·7	·3	·9	98·4	·7	·5	98·6	·9
25— 30	1·6	98·4	..	1·0	99·0	..	·6	99·4	..
30— 35	·7	99·3	..	·1	99·9	..	..	100·0	..
35— 40	·2	99·8	..	..	100·0	..	..	100·0	..
40— 45	3·5	96·5	..	1·6	97·8	·6	1·0	98·3	·7
45— 50	5·0	95·0	..	1·9	98·1	..	1·2	98·8	..
50— 55	9·0	91·0	..	4·2	95·8	..	3·1	96·9	..
55— 60	4·7	95·3	..	1·2	98·8	..	·6	99·4	..
60— 65	7·2	92·8	..	4·9	95·1	..	4·1	95·9	..
65— 70	..	100·0	..	..	100·0	..	..	100·0	..
70— 75	..	100·0	..	..	100·0	..	..	100·0	..
75— 80	..	97·3	2·7	..	97·9	2·1	..	98·8	1·2
80— 85	..	88·9	11·1	..	91·2	8·8	..	94·8	5·2
85— 90	..	87·3	12·7	..	89·4	10·6	..	94·9	5·1
90— 95	..	86·3	13·7	..	88·6	11·4	..	93·7	6·3
95—100	..	57·0	43·0	..	59·9	40·1	..	74·4	25·6
100 & up.	..	25·6	74·4	..	36·4	63·6	..	41·5	58·5

The emigration* at several ages shewn in Table VI, though graduated with much regularity, is very different in amount at particular ages from that which has been computed on page 160 (*ante*), and each person must form his own opinion as to which set of figures is likely to be nearest the truth.

Applying the final test previously used, by calculating the ratios of survivors indicated by the corrected figures, we have :—

* A further slight modification in the estimates of unregistered male births will be noticed. It affects the estimated emigration in 1861-70 to the extent of about 10,000 persons,—making it 156,248 instead of 165,800.

Age at the end of the ten years.	Proportion of survivors (including emigrants) out of 100 males who were living ten years earlier.		The like proportion according to the English Life Table No. 3.
	According to corrected figures, 1851 and 1861.	According to corrected figures, 1861 and 1871.	
10—15	87·1	87·0	86·4
15—20	94·3	94·8	94·2
20—25	93·7	94·1	93·7
25—30	92·0	92·0	92·0
30—35	91·4	91·1	90·9
35—40	90·6	89·8	89·9
40—45	89·3	88·3	88·6
45—50	87·4	86·4	86·8
50—55	84·9	84·3	84·3
55—60	81·0	80·2	80·5
60—65	76·6	75·1	75·3
65—70	68·8	66·5	67·7
70—75	57·7	56·3	56·9
75—80	42·9	40·8	43·5

These ratios, like those obtained from the corrected female population, shew a great deal of regularity, and resemble those derived from the English Life Table very closely, whilst they deviate widely from those based upon the uncorrected census figures.

It may perhaps be supposed that such resemblance is artificial, and is really the result of the adoption of the Life Table as a guide in the apportionment of the recorded deaths under the years of birth. I am, however, sure that such a use of the Life Table cannot have controlled the result to any very important extent. Any apportionment of deaths occurring amongst a gradually increasing population like that of England, effected on a consistent and reasonable plan, would necessarily come within a very few thousands of the figures shewn in Tables IV and VI, at least for that period of life extending over fifty years or thereabouts, which lies between childhood and old age.*

* The following specimen calculation, shewing the ingredients which constitute the computed deaths in 1861—1870 amongst females born in

There is this further remark to be made, viz., that the series of ratios, though they resemble those derived from the Life Table, deviate from them at particular ages to a very appreciable extent, thus :—

Age at end of decennium.	Males—Loss by death.			Females—Loss by death.		
	Life Table.	Corrected Population, 1851/60.	Corrected Population, 1861/70.	Life Table.	Corrected Population, 1851/60.	Corrected Population, 1861/70.
25—30	8·0	8·0	8·0	8·4	8·6	8·1
30—35	9·1	8·6	8·9	9·6	9·5	9·0
35—40	10·1	9·4	10·2	10·4	10·0	9·9
40—45	11·4	10·7	11·7	11·4	11·0	10·9
45—50	13·2	12·6	13·6	12·6	11·7	11·8
50—55	15·7	15·1	15·7	14·1	13·2	13·2
55—60	19·5	19·0	19·8	16·8	15·3	15·4
60—65	24·7	23·4	24·9	21·8	19·8	20·5

The actual mortality seems in general to be lower than that shewn in the Life Table, sometimes to the extent of five or six or even nine per cent. If, therefore, we were to compute the numbers of deaths on the basis of the Life Table, the result would be found to exceed the recorded deaths by many thousands. I naturally prefer to accept the teachings of the recorded facts, although they may not have been trans-

1851—1855, in 1816—1820, and in 1811—1815 respectively, will illustrate what I mean :—

Year of Death.	Born 1851—55.				Born 1816—20.			Born 1811—15.		
	Age 5—10.	Age 10—15.	Age 15—20.	Totals	Age 35—45.	Age 45—55	Totals.	Age 45—55.	Age 55—65.	Totals.
1861....	6730	518	..	7248	6234	645	6879	6514	..	6514
1862....	5259	1603	..	6862	4999	1994	6993	6669	..	6669
1863....	4630	2945	..	7575	3688	3392	7080	6813	..	6813
1864....	2452	3989	..	6441	2350	5366	7716	7686	..	7686
1865.. .	678	4626	..	5304	785	6993	7778	7873	..	7873
1866....	..	4499	620	5119	..	8048	8048	7413	844	8257
1867....	..	2949	1786	4735	..	7547	7547	5443	2410	7853
1868....	..	2274	3045	5319	..	7359	7359	3813	3983	7796
1869....	..	1437	4351	5788	..	7859	7859	2466	5985	8451
1870....	..	510	6192	6702	..	8098	8098	873	8264	9137
	19749	25350	15994	61093	18056	57301	75357	55563	21486	77049

posed quite correctly, rather than rely upon the Life Table,—which I feel sure has been graduated by some mathematical process at least as empirical as any estimate of mine. At the same time, I think I am bound to point out that so near a correspondence between the general character of my results and that of those obtained by mathematical graduation is a most important fact, tending to convince us more strongly than ever that great regularity would be found to exist in the age-distribution of deaths occurring amongst a large population, and during a moderately long period of time, if only a truthful record of ages could be secured.

Application of the suggested corrections.

On applying to the census figures of 1861 and 1871 for each of the eleven divisions, the proportional corrections shewn in Statements A and B, certain results were obtained, of which the following is an example:—

Age in 1871.	Division VIII (North-Western. Female Population in		Ratio of Population in 1871 to that in 1861, (per cent.)	National ratio of survivors (including allowance for Emigrants.)	Difference.
	1861.	1871.			
10—15	205692	179947	87·5	87·5	..
15—20	167248	171382	102·5	94·7	+ 7·8
20—25	151238	155554	102·9	93·7	+ 9·2
25—30	149921	145825	97·3	91·9	+ 5·4
30—35	144649	131174	90·7	91·0	— ·3

The final result of the above calculation is a column of differences which, if the rate of mortality in Lancashire and Cheshire exactly equalled that of the nation, would represent the gain or loss at each age on a balance of migrations. The whole of the differences thus ascertained for the eleven divisions respectively are shewn in Table VIII.

The last column in that table, shewing the differences for England and Wales, of course represents simply the effect of

migrations. I think that the differences in the other columns, at ages up to 35, are almost wholly consequent upon migrations.* The mortality in London and in Lancashire being greater than the average, the figures at those ages are perhaps less striking (because partially neutralised by such excessive mortality) than if the results of migrations stood out by themselves. It seems clear, in fact, that whilst the South-Western counties *lose* more than 26·8 per cent. of their young men in the ten years beginning with age 10 to 15 and ending with age 20 to 25, London *gains* rather more than 14·5 per cent. at the same time of life.

The ratios last mentioned, and many others which are shewn in Table VIII, are of great importance, as indicating the movements of large numbers of persons,† and therefore, by way of rendering our impressions about their meaning more definite, I have taken the pains to apportion the deaths recorded in Divisions I, V, and VIII at certain ages, with the following results :—

* The first line of Table VIII shews the effect of the removal of families from the first division to the semi-suburban districts in divisions II and III. Such families take with them a good many children; hence the loss to the metropolitan division, and the gain to the two divisions mentioned of both boys and girls.

† The following statement may make this fact clearer :—

Division.	Births recorded 1841—45.	Population in 1871 born 1841—45.	Proportion as 100 to—
I. London	316037	289951	91·7
V. South-western	266860	126219	47·3
VIII. North-western..	392151	279606	71·3

The survivors, according to the English Life Table No. 3, should be about 62·2 per cent. The low rate of mortality in the South-western counties renders it certain that, but for migrations, the ratio of enumerated population to the corresponding births would be higher than 62·2 in that division; in the other divisions it would be lower.

	Male Population (corrected.)		Apportioned Deaths, 1861—70.	Loss or gain by migrations.	Per cent. on Population in 1861.		The per centages in Table VIII being consequently made up thus—		
							Loss or gain compared with average death loss.	Loss or gain by migrations	Total.
	1861.	1871.			Deaths.	Loss or Gain by Migrations			
DIV. I. LONDON.									
Born in 1851-55..	147228	141937	7849	*pl.* 2558	5·3	*pl.* 1.7	*m.* ·1	*pl.* 1·7	*pl.* 1·6
„ 1846-50..	130615	141809	8042	*pl.*19236	6·1	*pl.* 14·7	*m.* ·2	*pl.* 14·7	*pl.* 14·5
„ 1841-45..	118767	134948	11004	*pl.*27185	9·3	*pl.* 22·9	*m.* 1·3	*pl.* 22·9	*pl.* 21·6
„ 1836-40..	120587	118776	12405	*pl.*10594	10·3	*pl.* 8·8	*m.* 1·4	*pl.* 8·8	*pl.* 7·4
DIV. V. SO.-WEST.									
Born in 1851-55..	106614	91014	4601	*m.*10999	4·3	*m.* 10·3	*pl.* ·9	*m.* 10·3	*m.* 9·4
„ 1846-50..	100897	67943	4838	*m.*28116	4·8	*m.* 27·9	*pl.* 1·1	*m.* 27·9	*m.* 26·8
„ 1841-45..	96505	57468	5637	*m.*27400	6·2	*m.* 30·3	*pl.* 1·8	*m.* 30·3	*m.* 28·5
„ 1836-40..	69223	50745	5430	*m.*13048	7·8	*m.* 18·9	*pl.* 1·1	*m.* 18·9	*m.* 17·8
DIV. VIII. LANC. AND CHESH.									
Born in 1851-55..	166782	160706	10641	*pl.* 4565	6·4	*pl.* 2·7	*m.* 1·2	*pl.* 2·7	*pl.* 1·6
„ 1846-50..	150583	145788	10945	*pl.* 6150	7·3	*pl.* 4·1	*m.* 1·4	*pl.* 4·1	*pl.* 2·7
„ 1841-45..	138424	133781	13247	*pl.* 8604	9·6	*pl.* 6·2	*m.* 1·6	*pl.* 6·2	*pl.* 4·6
„ 1836-40..	132498	119061	13348	*m.* 89	10·1	*m.* ·1	*m.* 1·2	*m.* ·1	*m.* 1·2

	Female Population (corrected.)		Apportioned Deaths, 1861—70.	Loss or gain by migrations.	Per cent. on Population in 1861.		The per centages in Table VIII being consequently made up thus—		
							Loss or gain* compared with average death loss.	Loss or gain by migrations	Total.
	1861.	1871.			Deaths.	Loss or gain by migrations			
DIV. I. LONDON.									
Born in 1851-55..	149084	164132	7810	*pl.*22858	5·2	*pl* 15·3	*pl.* ·1	*pl.* 15·3	*pl.* 15·4
„ 1846-55..	133936	165675	7908	*pl.*39647	5 9	*pl.* 29 6	*pl.* ·4	*pl.* 29·6	*pl.* 30·0
„ 1841-45..	139844	155003	10469	*pl.*25628	7·5	*pl.* 18·3	*pl.* ·6	*pl.* 18·3	*pl.* 18·9
„ 1836-40..	143074	136729	11944	*pl.* 5599	8·3	*pl.* 3·9	*pl.* ·7	*pl.* 3·9	*pl.* 4·6
DIV. V. SO.-WEST.									
Born in 1851-55..	106074	90500	4892	*m.*10682	4·6	*m.* 10.1	*pl.* ·7	*m.* 10·1	*m.* 9·4
„ 1846-50..	97784	77303	5375	*m.*15106	5·5	*m.* 15·4	*pl.* ·8	*m.* 15·4	*m.* 14·6
„ 1841-45..	91581	68751	6249	*m* 16581	6·8	*m.* 18·1	*pl.* 1·3	*m.* 18·1	*m.* 16·8
„ 1836-40..	77717	61231	5950	*m.*10536	7·7	*m.* 13·5	*pl.* 1·3	*m.* 13·5	*m.* 12·2
DIV. VIII. LANC. AND CHESH.									
Born in 1851-55..	167248	171382	10115	*pl.*14249	6·0	*pl.* 8·5	*m.* .7	*pl.* 8·5	*pl.* 7·8
„ 1846-50..	151238	155554	11094	*pl.*15410	7·3	*pl.* 10·2	*m.* 1·0	*pl.* 10·2	*pl.* 9·2
„ 1841-45..	149921	145825	14024	*pl.* 9928	9·3	*pl.* 6·6	*m.* 1·2	*pl.* 6 6	*pl.* 5.4
„ 1836-40..	144649	131174	14900	*pl.* 1425	10·3	*pl.* 1·0	*m.* 1·3	*pl.* 1·0	*m.* ·3

Similar tables might be constructed for every age, and not only for each registration division, but for every registration district in the kingdom.

* I am of opinion that the gain in this column, so far as regards London death-rates, is due to the departure of many women when in bad health, some of whom die in the country. But for the effect of such departures, the recorded deaths and the apparent net gain by migrations would reach higher numbers.

It will be observed that the apparent gain of the metropolitan division through migrations is less striking than might have been expected, although it is very large. But what is really shewn is the *balance* resulting, after deducting from the *gain* of strangers, the *loss* arising from the removal of families over the border of the division into extra metropolitan Middlesex, Surrey and Kent, or even into the nearer parts of Essex and Hertfordshire. If the London boundary were largely extended, it would be found that the *gain* by immigration from a distance is larger, and the *loss* by emigration is less, than now appears; and, in short, the statements whether of urban gain or of rural loss at ages up to 35 would be more striking than those exhibited in Table VIII.

After 35, both sexes in London and in the north-western counties exhibit a steady loss at each age, no doubt attributable in the main to the heavy mortality experienced in those divisions. The rural divisions numbered V and XI shew a loss until past the age of 50, due to emigration. These and several other agricultural divisions (those numbered II, III, and IV), shew considerable gains at the higher ages, partly due to their mortality being low, and partly resulting from other causes.

It is evident that those who emigrate beyond sea (from Division V for example) are older persons than those who leave their native division to seek employment at a short distance, as do the majority of those who migrate from the eastern counties (Division IV). Two-thirds of these latter are perhaps between the ages of 14 and 20 years when they depart, and very few of them can be more than 25 years old.

The apparent relative mortality of the sexes at certain ages must be influenced by the dissimilar degrees of inaccuracy in the population returns for males and females respectively, as the following short statement will shew :—

Age.	Mean population 1861—71, from uncorrected figures.		Mean population 1861—71, from corrected figures.		Deaths 1861—70.		Deaths per 1000.			
							From uncorrected.		From corrected.	
	Males.	Fem'l's.	Males.	Fem'l's.	Males.	Fem'l's.	M.	F.	M.	F.
15—20	1021321	1035205	1011321	1035632	62921	68553	6·2	6·6	6·2	6·6
20—25	906063	1011063	892063	938433	76591	80463	8·5	8·0	8·6	8·6
25—30	788782	886088	788782	849341	147734	160329	9·9	9·7	9·9	10·0
30—35	704005	769381	710005	761546						

The facts I have stated, and the experiments I have made, are perhaps sufficient to suggest by what methods of estimation an idea can be gained of the distribution of population as to ages, when once the total increase or decrease is known.* But they also tend to shew the difficulties which surround the subject, and the need which exists that enquirers should summon up sufficient courage to treat with a certain degree of freedom the returns of the census and registration offices.

*The procedure for instance in 1881 might be :—Take the English population at each age in 1871 as already corrected, and introduce the numbers of births returned in 1876—80 and 1871—75 as the first two terms of the series, adding a reasonable allowance for non-registration. Deduct the deaths in 1871—80, duly apportioned under periods of birth. The gross number of either sex enumerated in 1881 being known, the net loss or gain by migrations can then be ascertained. Apportion this in somewhat similar proportions to those observed in 1851—60. The final results will exhibit approximately the distribution of population by ages in 1881.

TABLE I.—Shewing the Rate of Increase of Population (per cent.) of each sex and *at each age* in the several Registration Divisions of England and Wales during the ten years, 1851—61.

TABLE II.—Shewing the Proportion (per cent.) of Population enumerated in 1861 to that enumerated *at corresponding ages ten years earlier*, in the several Registration Divisions, and in England and Wales.

[These two Tables having been calculated simply with the object of shewing that the proportional results obtainable by a comparison of the numbers enumerated at successive censuses, at particular ages, do not display sufficient regularity to justify the belief that such proportions would be approximately maintained decennium after decennium,—it is considered unnecessary to print them. The remaining Tables are printed in full, as without reference to, and careful consideration of, the facts they display, the paper would almost lose its significance.]

TABLE III.—Shewing the enumerated population in 1851, 1861, and 1871, at each quinquennial period of life, the estimated births in 1851—70, the registered deaths apportioned according to date of birth, and the numbers of inhabitants lost or gained, on the hypothesis of the correctness of the preceding figures.

Born in	Population enumerated.			Deaths registered.		Difference—referable to errors and migrations.*			
	Males.			Males.		1851—60.		1861—70.	
	1851.	1861.	1871.	1851—60.	1861—70.	Loss.	Gain.	Loss.	Gain.
1866—70	..	+2011024	1536464	..	427200	..	..	47360	..
1861—65	..	+1887702	1350819	..	546170	..	..	..	9287
1856—60	+1751531	1354907	1220770	365536	180534	31088	..	..	46397
1851—55	+1651656	1172960	1084713	482227	60259	..	3531	27988	..
1846—50	1176753	1059889	951917	156291	62499	..	39427	45473	..
1841—45	1050228	957930	843278	58497	75494	33801	..	39158	..
1836—40	963995	860210	746320	60004	75606	43781	..	38284	..
1831—35	873236	734287	640819	69604	74657	69345	..	18811	..
1826—30	795455	661690	590097	67451	77910	66314	..	..	6317
1821—25	699345	590280	506947	65694	81085	43371	..	2248	..
1816—20	617889	551058	455788	66739	84369	92	..	10901	..
1811—15	532680	453310	345907	67483	89886	11887	..	17517	..
1806—10	474211	392196	294675	69394	95736	12621	..	1785	..
1801—05	392882	299000	205370	73888	103431	19994	..	..	9801
1796—1800	346104	265536	149887	78530	108473	2038	..	7176	..
1791—95	254892	175538	82091	84399	108450	..	5045	..	15003
1786—90	227240	128428	38573	90915	94795	7897	..	..	4940
1781—85	151640	71780	11685	92953	64919	..	13093	..	4824
1776—80	114730	34256	2383	83815	33036	..	3341	..	1163
1771—75	65016	10359	390	58972	11790	..	4315	..	1821
1766—70	31690	2191	41	30694	2768	..	1195	..	618
1761—65	10423	399	..	11270	397	..	1246	2	..
1756—60	2282	55	..	2781	25	..	554	30	..
1751—55	456	..	..	463	..	..	7	..	..
1746—50	78	..	..	28	..	50	..	..	..
Age not stated	..	..	..	908	..	..	908	..	..
Totals	12184412	13674985	11058934	2138536	2459489	342279	72662	256733	100171
	Females.			Females.					
1866—70	..	‡1936784	1534812	..	359329	..	..	42643	..
1861—65	..	‡1814081	1355707	..	473449	..	..	..	15075
1856—60	‡1681961	1345875	1203469	305511	172128	30575	..	..	29722
1851—55	‡1586949	1171106	1095699	419780	61093	..	3937	14314	..
1846—50	1171354	1045287	1052843	151062	66098	..	24995	..	73654
1841—45	1042131	974712	937299	60003	79459	7416	..	..	42046
1836—40	949362	969283	813675	65106	81018	..	85027	74590	..
1831—35	883953	834877	700534	76754	79463	..	27678	54880	..
1826—30	871152	725088	639705	76237	77870	69827	..	7513	..
1821—25	771130	634262	546094	73309	76696	63559	..	11472	..
1816—20	658237	583069	488901	70730	75357	4438	..	18811	..
1811—15	555879	477530	372261	67174	77049	11175	..	28220	..
1806—10	494408	414367	328010	63923	84997	16118	..	1360	..
1801—05	406107	315004	235868	65030	97481	26073	..	..	18345
1796—1800	362697	290704	174086	72028	108636	..	35	7982	..
1791—95	271395	201034	99896	82975	114233	..	12614	..	13095
1786—90	254070	152917	51265	93843	105704	7310	..	..	4052
1781—85	175879	88860	17896	99612	78080	..	12593	..	7116
1776—80	135432	45403	4338	94274	43589	..	4245	..	2524
1771—75	81086	15608	855	71487	17466	..	6009	..	2713
1766—70	42150	3994	119	40514	4849	..	2358	..	974
1761—65	14982	839	..	16604	894	..	2461	..	55
1756—60	3969	146	..	4724	73	..	901	73	..
1751—55	874	..	..	921	..	..	47	..	..
1746—50	137	..	..	76	..	61	..	..	..
Age not stated	..	..	..	502	..	..	502	..	..
Totals	12415294	14040830	11653332	2072179	2335011	236552	183402	261858	209371

* It will be noticed that I have paid no regard to the interval of time between the census day and 1st January preceding, treating the exact decennium as being a near enough equivalent of the interval between census and census.

+ These numbers represent the births in the periods mentioned, *plus* an allowance for omissions, viz.—1¾ per cent, on births in 1866—70, and 2, 2¼, and 3½ per cent. on births in the earlier periods respectively.

‡ The correction adopted in the case of female births is rather larger than in that of male births. These figures are those returned, *plus* 2 per cent. on the births in 1866—70, and 2¼, 2¾, and 4 per cent. respectively on the births in the earlier periods.

TABLE IV.—Shewing the Female population in 1851, 1861, and 1871, as corrected upon certain hypotheses, the estimated births in 1851—70, the registered deaths, apportioned according to date of birth, after adjustment, and the loss or gain of inhabitants upon a balance of migrations.

Born in	Population (corrected). Females.			Deaths registered. Females.		Loss or gain by migrations. 1851—60.		1861—70.	
	1851.	1861.	1871.	1851–60.†	1861—70	Loss.	Gain.	Loss.	Gain.
1866—70	..	*1936784	1571448	..	359329	..	..	6007	..
1861—65	..	*1822952	1340794	..	473449	..	..	8709	..
1856—60	*1690145	1379277	1203469	305511	172128	5357	..	3680	..
1851—55	*1586949	1157052	1094603	419780	61093	10117	..	1356	..
1846—50	1203052	1046332	981249	151062	66098	5658	..	..	1015
1841—45	1028583	976661	898871	60003	79459	..	8081	..	1669
1836—40	954109	895618	809607	65106	81018	..	6615	4993	..
1831—35	887489	799812	711042	76754	79463	10923	..	9307	..
1826—30	804073	713486	624991	76237	77870	14350	..	10625	..
1821—25	736430	652021	567938	73309	76696	11100	..	7387	..
1816—20	645730	569658	488901	70730	75357	5342	..	5400	..
1811—15	573667	501406	421400	67174	77049	5087	..	2957	..
1806—10	483036	415610	328010	63923	84997	3503	..	2603	..
1801—05	426412	357844	258275	65030	98802	3538	..	767	..
1796—1800	364148	290704	177568	72028	112636	1416	..	500	..
1791—95	308305	222745	104192	84226	118269	1334	..	284	..
1786—90	254070	156434	49008	97626	107225	10	..	201	..
1781—85	195578	92680	17144	103438	76172	..	540	..	636
1776—80	138547	43269	4121	95728	39172	..	450	..	24
1771—75	84572	14952	641	69678	14330	..	58	..	19
1766—70	40043	3734	60	36401	3732	..	92	..	58
1761—65	14188	614	..	13613	617	..	39	..	3
1756—60	3671	56	..	3631	50	..	16	6	..
1751—55	629	..	..	636	..	..	7	..	..
1746—50	52	..	..	53	..	..	1	..	..
Totals	12423478	14049701	11653332	2071677	2335011	77735	15899	64782	3424

* Births, plus allowance for those unregistered, say 2 per cent. on births in 1866—70, and $2\frac{3}{4}$, $3\frac{1}{4}$, and 4 per cent. respectively on births in the earlier periods.

† The few deaths "age not stated" are disregarded.

TABLE V.—Shewing the degree of incorrectness of the returns of the ages of the female population, according to the hypotheses upon which Table IV is based.

True Age.	1851. Returned at next lower age.	1851. Returned correctly.	1851. Returned at next higher age.	1861. Returned at next lower age.	1861. Returned correctly.	1861. Returned at next higher age.	1871. Returned at next lower age.	1871. Returned correctly.	1871. Returned at next higher age.
0— 5	..	1171354	31698	..	1345875	33402	..	1534812	36636
5—10	..	1010433	18150	..	1137704	19348	..	1319071	21723
10—15	..	931212	22897	..	1025939	20393	..	1181746	21723
15—20	..	861056	26433	..	954319	22342	..	1073976	20627
20—25	..	804073	..	..	895618	..	..	981249	..
25—30	40646	695784	..	51323	748189	..	50967	847904	..
30—35	75346	570384	..	86388	627098	..	89395	720212	..
35—40	87853	485814	..	97990	554031	..	93463	617579	..
40—45	70065	412971	..	80231	489427	..	82955	542036	..
45—50	81437	344975	..	93642	407764	..	97669	470269	..
50—55	61132	303016	..	69766	345844	..	75825	413076	..
55—60	59681	248624	..	68523	289321	..	75~25	345575	..
60—65	22771	231299	..	25683	265021	..	26686	301324	..
65—70	22771	172807	..	25683	197062	..	26686	231589	..
70—75	3072	135432	43	3972	152462	..	4279	173289	..
75—80	..	81043	3529	455	88860	3365	797	99896	3499
80—85	..	38621	1422	..	42038	1231	..	47766	1242
85—90	..	13560	628	..	14377	575	..	16654	490
90—95	..	3341	330	..	3419	315	..	3848	273
95-100	..	514	85	..	524	90	..	582	59
100—	..	52	..	..	56	..	..	60	..

TABLE VI.—Shewing the Male population in 1851, 1861 and 1871, as corrected upon certain hypotheses ; the estimated births in 1851—70 ; the registered deaths apportioned according to date of birth, after adjustment; and the loss or gain of inhabitants upon a balance of migrations.

Born in	Population (Corrected.) Males.			Deaths Registered. Males.		Loss or gain by migrations. 1851—60.		1861—70.	
	1851.	1861.	1871.	1851–60.†	1861–70.	Loss.	Gain.	Loss.	Gain.
1866—70	..	*2006083	1572464	..	427200	..	..	6419	..
1861—65	..	*1892329	1335819	..	546170	..	..	10340	..
1856—60	*1758383	1388307	1218770	365536	180534	4540	..	..	10997
1851—55	*1651656	1157960	1074713	482227	60259	11469	..	22988	..
1846—50	1208453	1057889	937917	156291	62499	..	5727	57473	..
1841—45	1030228	947930	843278	58497	75494	23801	..	29158	..
1836—40	960000	846210	751320	60004	75606	53786	..	19284	..
1831—35	868231	734287	644819	69604	74657	64340	..	14811	..
1826—30	784155	668690	580097	67451	77910	48314	..	10683	..
1821—25	696345	594280	506947	65694	81085	36371	..	6248	..
1816—20	624889	539058	447788	66739	84369	19092	..	6901	..
1811—15	535680	453310	357907	67483	89886	14887	..	5517	..
1806—10	458711	384196	284675	69394	95736	5121	..	3785	..
1801—05	389882	312000	217370	73888	104635	3994	..	..	10005
1796—1800	334904	256136	150887	78530	111999	238	..	..	6750
1791—95	273892	188538	83091	85504	111681	..	150	..	6234
1786—90	222840	129928	37173	94206	95445	..	1294	..	2690
1781—85	168040	73280	11235	96016	62880	..	1256	..	835
1776—80	116466	32356	2333	81496	29493	..	386	‡530	..
1771—75	66800	9509	314	57119	9550	172	..	..	‡355
1766—70	29493	2101	17	27390	2118	2	..	..	34
1761—65	9412	274	..	9116	266	22	..	8	..
1756—60	2166	20	..	2114	17	32	..	3	..
1751—55	318	..	..	310	..	8	..	..	..
1746—50	20	..	..	19	..	1	..	..	..
Totals..	12191264	13674671	11058934	2137628	2459489	286190	8813	194148	37900

* Births, *plus* allowance for those unregistered, say 1½ per cent. on births in 1866—70, and 2¼, 2·65 and 3·5 per cent. respectively on births in the earlier periods.

† The few deaths "age not stated" are disregarded.

‡ These figures are, I think, improbable ; I suppose the apportionment of deaths may be chiefly in fault.

TABLE VII.—Shewing the degree of incorrectness of the returns of the ages of the Male population, according to the hypotheses upon which Table VI is based.

True Age.	1851. Returned at next Lower Age.	1851. Returned Correctly.	1851. Returned at next Higher Age.	1861. Returned at next Lower Age.	1861. Returned Correctly.	1861. Returned at next Higher Age.	1871. Returned at next Lower Age.	1871. Returned Correctly.	1871. Returned at next Higher Age.
0— 5	..	1176753	31700	..	1354907	33400	..	1536464	36000
5—10	..	1018528	11700	..	1139560	18400	..	1314819	21000
10—15	..	952295	7705	..	1041489	16400	..	1199770	19000
15—20	..	865531	2700	..	941530	6400	..	1065713	9000
20—25	..	784455	..	..	846210	..	..	937917	..
25—30	8300	688045	..	7600	726687	..	5000	838278	..
30—35	11300	613589	..	7600	661090	..	5000	746320	..
35—40	4300	531380	..	600	590280	3400	..	640819	4000
40—45	1300	457411	..	..	539058	..	..	580097	..
45—50	16800	373082	..	8600	444710	..	6000	500947	..
50—55	19800	315104	..	8600	375596	..	6000	441788	..
55—60	31000	242892	..	16600	295400	..	14000	343907	..
60—65	12000	210840	..	3600	252536	..	2000	282675	..
65—70	16400	151640	..	13000	175538	..	12000	205370	..
70—75	..	114730	1736	..	128428	1500	..	149887	1000
75—80	..	63280	3520	..	70280	3000	..	81091	2000
80—85	..	28170	1323	..	31256	1100	..	36573	600
85—90	..	9100	312	..	9259	250	..	11085	150
90—95	..	1970	196	..	1941	160	..	2233	100
95—100	..	260	58	..	239	35	..	290	24
100—	..	20	..	..	20	..	..	17	..

TABLE VIII.—Shewing the differences between (1) The National per-centage of persons surviving at each age in 1871, (*including estimated loss by emigration in* 1861—71) calculated on the numbers ten years younger enumerated in 1861; and (2) the ratios of inhabitants *enumerated* in *each Division* in 1871, compared with the respective populations ten years younger enumerated in 1861. The populations employed have first been corrected according to Statements A and B.

MALES. Excess or deficiency of the ratio of survivors, compared with National ratio.

Age in 1871.	I. London.	II. South Eastern.	III. South Midland.	IV. Eastern.	V. South Western.	VI. West Midland.	VII. North Midland.	VIII. North Western.	IX. York-shire.	X. Northern.	XI. Welsh.	England and Wales.
10—15	*m.* 4·3	*pl.* 7·6	*pl.* 6·1	*pl.* 1·9	*m.* 1·3	*m.* ·3	*m.* ·6	*m.* ·7	*pl.* 2·8	*pl.* 4·2	*m.* ·7	*pl.* ·8
15—20	*pl.* 1·6	*pl.* 1·2	*m.* 8·8	*m.* 11·2	*m.* 9·4	*m.* 3·6	*m.* 6·0	*pl.* 1·6	*pl.* 3·6	*pl.* 4·8	*m.* 3·6	*m.* 2·0
20—25	*pl.* 14·5	*m.* 4·0	*m.* 20·9	*m.* 25·3	*m.* 26·8	*m.* 10·0	*m.* 14·2	*pl.* 2·7	*pl.* 4·4	*pl.* 12·8	*m.* 9·9	*m.* 5·4
25—30	*pl.* 21·6	*m.* 3·2	*m.* 14·1	*m.* 21·2	*m.* 28·5	*m.* 8·4	*m.* 13·0	*pl.* 4·6	*pl.* 6·0	*pl.* 14·6	*m.* 13·1	*m.* 3·0
30—35	*pl.* 7·4	*m.* 2·8	*m.* 4·2	*m.* 6·6	*m.* 17·8	*m.* 5·9	*m.* 6·0	*m.* 1·2	*pl.* 4·5	*pl.* 5·5	*m.* 9·5	*m.* 2·3
35—40	*m.* 1·6	*pl.* ·1	*pl.* 1·0	*m.* ·3	*m.* ·88	*m.* 3·4	*m.* 2·3	*m.* 3·4	*pl.* 3·8	*pl.* 2·0	*m.* 7·2	*m.* 2·0
40—45	*m.* 3·6	*pl.* ·2	*pl.* 1·8	*pl.* ·5	*m.* 4·9	*m.* 1·9	*m.* 1·0	*m.* 2·3	*pl.* 3·7	*pl.* 3·3	*m.* 7·2	*m.* 1·5
45—50	*m.* 5·9	*pl.* 1·7	*pl.* 2·4	*pl.* 1·9	*m.* 1·1	*m.* 1·8	*pl.* ·6	*m.* 3·5	*pl.* 1·8	*pl.* 2·9	*m.* 3·0	*m.* 1·1
50—55	*m.* 7·2	*pl.* 2·1	*pl.* 2·1	*pl.* 2·4	*m.* ·8	*m.* 2·1	*pl.* 1·8	*m.* 4·9	*pl.* 2·5	*pl.* 2·0	*m.* ·6	*m.* 1·2
55—60	*m.* 10·6	*pl.* 5·5	*pl.* 2·6	*pl.* 2·7	*pl.* 1·3	*m.* 1·8	*pl.* 2·9	*m.* 6·7	*pl.* 1·4	*pl.* ·9	*pl.* ·9	*m.* 1·3
60—65	*m.* 8·5	*pl.* 4·2	*pl.* 4·8	*pl.* 5·7	*pl.* 1·3	*m.* 1·2	*pl.* 2·5	*m.* 7·3	*m.* 1·7	*pl.* ·7	*pl.* ·6	*m.* 1·0
65—70	*m.* 4·2	*pl.* 10·5	*pl.* 8·3	*pl.* 10·5	*pl.* 7·2	*pl.* 3·6	*pl.* 6·0	*m.* 3·9	*pl.* ·9	*pl.* 1·3	*pl.* 2·3	*pl.* 3·2
70—75	*m.* 5·4	*pl.* 9·0	*pl.* 7·8	*pl.* 10·0	*pl.* 7·7	*pl.* 2·5	*pl.* 6·5	*m.* 6·3	*m.* ·3	*pl.* 2·2	*pl.* 2·1	*pl.* 2·6
75—80	*m.* 4·8	*pl.* 8·0	*pl.* 6·5	*pl.* 9·4	*pl.* 7·1	*pl.* 4·3	*pl.* 5·5	*m.* 4·5	*m.* 1·3	*pl.* 1·7	*pl.* 6·5	*pl.* 3·3
80—85	*m.* 3·1	*pl.* 4·4	*pl.* 2·6	*pl.* 6·1	*pl.* 4·9	*pl.* 2·8	*pl.* 3·0	*m.* 3·4	*m.* 2·1	*pl.* ·5	*pl.* 8·0	*pl.* 2·1
85—90	*m.* ·4	*pl.* 2·8	*pl.* ·1	*pl.* 3·5	*pl.* 1·6	*pl.* 1·4	*pl.* ·6	*m.* 2·2	*m.* 1·5	*pl.* 2·3	*pl.* 4·7	*pl.* 1·1

FEMALES. Excess or deficiency of the ratio of survivors, compared with the National ratio.

Age in 1871.	I. London.	II. South Eastern.	III. South Midland.	IV. Eastern.	V. South Western.	VI. West Midland.	VII. North Midland.	VIII. North Western.	IX. York-shire.	X. Northern.	XI. Welsh.	England and Wales.
10—15	*m.* 3·0	*pl.* 5·5	*pl.* 1·6	*m.* ·5	*m.* 2·9	*m.* 1·4	*m.* 1·9	*pl.* 7·8	*pl.* 1·2	*pl.* 26	*m.* 2·3	*m.* ·3
15—20	*pl.* 15·4	*m.* 1·0	*m.* 7·1	*m.* 15·0	*m.* 9·4	*m.* 3·1	*m.* 6·9	*pl.* 9·2	*pl.* 3·6	*pl.* 1·2	*m.* 7·8	*m.* ·1
20—25	*pl.* 30·0	*m.* 1·5	*m.* 11·7	*m.* 20·3	*m.* 14·6	*m.* 4·9	*m.* 11·1	*pl.* 9·2	*pl.* 3·6	*pl.* 8	*m.* 12·9	*pl.* ·1
25—30	*pl.* 18·9	*pl.* 8·0	*m.* 6·0	*m.* 12·5	*m.* 16·8	*m.* 5·3	*m.* 10·3	*pl.* 5·4	*pl.* 3·5	*pl.* 46	*m.* 11·9	*m.* ·1
30—35	*pl.* 4·6	*pl.* 7·9	*m.* 1·0	*m.* 5·5	*m.* 12·2	*m.* 4·8	*m.* 5·9	*m.* ·3	*pl.* 3·7	*pl.* 5·6	*m.* 5·8	*m.* ·7
35—40	*m.* 3·1	*pl.* 5·3	*pl.* 1·3	*m.* 2·5	*m.* 7·2	*m.* 2·2	*m.* 3·3	*m.* 2·9	*pl.* 3·7	*pl.* 4·4	*m.* 4·4	*m.* 1·3
40—45	*m.* 5·0	*pl.* 4·2	*pl.* 1·3	*m.* ·3	*m.* 4·3	*m.* 1·8	*m.* 1·8	*m.* 2·1	*pl.* 2·5	*pl.* 1·5	*m.* 5·8	*m.* 1·4
45—50	*m.* 6·4	*pl.* 3·7	*pl.* 2·1	*pl.* ·3	*m.* 1·1	*m.* ·9	*m.* 1·1	*m.* 2·4	*pl.* 1·8	*pl.* 1·4	*m.* 2·8	*m.* 1·1
50—55	*m.* 5·8	*pl.* 4·1	*pl.* 1·7	*pl.* ·3	*pl.* ·7	*m.* 1·3	*m.* ·3	*m.* 4·1	*pl.* 1·5	*pl.* 2·3	*m.* ·2	*m.* ·9
55—60	*m.* 6·9	*pl.* 5·7	*pl.* 3·6	*pl.* 1·2	*pl.* ·1	*m.* ·8	*pl.* 1·2	*m.* 5·0	*pl.* 2·1	*pl.* 2·2	*m.* ·3	*m.* ·6
60—65	*m.* 4·7	*pl.* 4·3	*pl.* 3·7	*pl.* 2·2	*pl.* 1·1	*m.* ·6	*pl.* ·5	*m.* 4·9	*m.* 1·1	*m.* ·1	*pl.* 2·1	*m.* ·5
65—70	*m.* 3·9	*pl.* 3·7	*pl.* 4·0	*pl.* 5·5	*pl.* 3·2	*pl.* ·5	*m.* ·1	*m.* 6·9	*m.* 2·3	*m.* ·5	*pl.* 1·2	*m.* ·3
70—75	*m.* 4·0	*pl.* 6·0	*pl.* 4·1	*pl.* 6·1	*pl.* 3·5	*pl.* ·3	*pl.* 1·0	*m.* 8·4	*m.* 3·0	*m.* ·8	*pl.* ·8	*m.* ·2
75—80	*m.* 3·2	*pl.* 3·5	*pl.* ·7	*pl.* 5·7	*pl.* 3·0	*pl.* ·3	*pl.* ·6	*m.* 7·1	*m.* 4·6	*m.* ·4	*pl.* 4·3	*m.* ·1
80—85	*m.* 2·4	*pl.* 2·1	*m.* ·1	*pl.* 4·3	*pl.* ·4	*pl.* ·5	*m.* 1·2	*m.* 5·7	*m.* 3·8	*m.* 2·0	*pl.* 8·1	*m.* ·2
85—90	*m.* ·1	*pl.* 1·6	*pl.* ·2	*pl.* 3·8	*pl.* 1·5	*pl.* 8	*m.* ·7	*m.* 2·6	*m.* 1·4	*m.* ·1	*pl.* 4·7	*pl.* ·7

MEMO.—*If* the mortality in each Division was exactly the same, these ratios would truly represent loss by emigration or gain by immigration; however, there is a good reason to think that at the higher ages the losses are (in Divisions I and VIII especially) caused by excessive mortality, and the gains in other Divisions are largely occasioned by the mortality therein being below the average.

PROCEEDINGS,

TWENTY-EIGHTH SESSION, 1875-76.

ANNUAL GENERAL MEETING,

Royal Institution, Colquitt Street, Liverpool, November 2nd, 1875.

The Rev. Canon HUME, D.C.L., President, in the Chair.

The Secretary read the following

REPORT.

The Session which has just closed has been in several respects an interesting one; and the retiring Council venture to hope, a profitable one for the Society. In the first instance, there has been an abundance of good papers; and if ever the intellectual matter fall short, it is more likely to be from a want of successful mining than from an absence of rich ore. Second, certain difficulties which had occurred have been cleared away, and the path of inquiry has been made more smooth. Thirdly, the ordinary business of the Society has been conducted with success.

The Library of the Society has now assumed large dimensions, and has become of considerable importance to the members, though most of them are unacquainted with it. A great effort has therefore been made to put it into complete order, and the work is now approaching a successful termination. The Council hope that it may be available to all the Members, in the course of the Session. The new Catalogue has now nearly passed through the press, and a copy of it will soon be in the hands of the various Members. Along with the list of books there will be given a list of the objects in the Society's collection, now deposited at the Town Museum.

The retirement of the Assistant-Secretary at the close of last Session, rendered the appointment of a successor necessary as soon as convenient. But the President and the Honorary Secretary generously undertook to divide the work between them for one Session; and they have performed it with at least the usual efficiency, though at considerable inconvenience to themselves. The Council have now nominated to this post, Mr. Arthur Wakefield, of the Liverpool Library; and though they propose to relieve him of about half the usual work, viz., the editing of the Annual Volume, they have confidence that the property will be well looked after, and especially that the Library will be kept in good condition.

The superabundant copies of the volumes for the last twenty-seven years have now become so numerous as to amount to nearly 2000; and the space which they occupy in store, is urgently wanted for other purposes. The Council therefore recommend that as soon as convenient, and as far as possible, they be arranged in sets,—say the first series by itself, and the second series in like manner,—and that these, as well as single volumes, be offered to the Members at such prices as will secure a sale. Many of them are of great interest and value, and are hand somely put up in cloth boards, lettered.

The Annual volume which was ready last Session before the Anniversary, the 18th of October, has been delayed this year by causes which were unavoidable, some of which have been noticed. But it is in hands and steadily progressing; and will be duly forwarded to every member entitled to receive it.

Mr. H. Ecroyd Smith, the Honorary Curator, has removed from Liverpool, and has therefore been forced to resign his office. The Society has more than once expressed its acknowledgments for his services in connexion with the subject of Archæology; and it is only fitting to notice in like manner the services which he has rendered for six years in connexion with this office. In the course of the Session, the Honorary Librarian also resigned his office, on the ground that it made too great demands on his time; and the Council have for the present left the office vacant, in the hope, that when the Library and stock are in thorough order, they may more easily find some well-qualified gentleman who will undertake the office.

All outstanding arrears of subscriptions have been called in; the most explicit information has been conveyed on the subject to the members; and now, all those whose names appear on the list are in loyal connexion with the Society. But it has been necessary to put the laws in force against a few; so that four have been silently erased from the roll, and eight have been formally expelled from the Society.

Death has been unusually busy with the members during the last year, in which several of those who were longest connected with the Society have passed away. Among these were two of the Members of Council, Mr. McQuie and Mr. Wilkinson of Burnley, both of whom had rendered good service to the Society. Mr. McQuie was for several years one of the Auditors; and Mr. Wilkinson,—a biographical account of whom will be read at one of our early meetings,—was a writer of great versatility and talent. The deaths in all have been twelve during two successive sessions; in addition to some who have been compelled to retire, especially from the pressure of age and infirmity. Among these is Mr. J. T. Towson, F.R.G.S., who has been for many years an able and earnest member of several of our local learned societies.

The President, whose services have now extended over six years, and who for the last three only yielded to the earnestly expressed wishes of the Council, has placed his resignation unreservedly in their hands, though promising assistance in any department in which his services can be made available. While thanking him for the interest which he has shown in the Society from its foundation, they have endeavoured to select a successor who is not unknown to the Society as an author, and from whom other literary and archæological contributions may be expected. He is prominently connected with the district which it is the

object of the Society to illustrate: and he will, they have no doubt, sustain the interest and maintain the honour of the Society.

The Balloting Slips for the Council and Officers have been made out in accordance with the Laws.

The Treasurer was not prepared at this meeting with a Balance Sheet; but he stated generally that about £100 had been received during the Session, while the gross arrears appeared to be between £60 and £70. (See page 194.)

It was moved by Mr. Richards, seconded by the Rev. R. Salthouse, F.R.G.S., and resolved,—That the Report now read be adopted, printed in the Proceedings, and circulated among the Members.

A Ballot having been taken for the Council and Officers, the following gentlemen were declared duly elected. See page iv.

November 11th, 1875.

Rev. Canon Hume, D.C.L., Vice-President, in the Chair.

The following objects were exhibited:—

By Miss ffarington.

Four interesting drawings, of some stained glass at Worden, said to have come from Lathom House. They represented respectively the following:—

1. Arms of Edward Stanley, third earl of Derby, K.G., *ob.* 1572. Over it is the date 1568. It contained sixteen quarterings, viz.:—(1) Stanley, (2) Lathom, (3) Strange. (4) Man, (5) Mohun, (6) Bassett, (7) Burrell, (8) Lacy, (9) Warren, (10) Woodville, (11) Montalt, (12) Strange, (13) Blount or Mountjoy, (14) Dymoke, (15) St. Pal, (16) Lisle.

The following descriptive note was written on the back:—

"There is no *azure* in the bend of Stanley, and the field of Lathom "is *argent* instead of *or*. No. 6 was most likely meant for Bassett, but "the piles should have been *gules* and the canton on the dexter side. "7 I am disposed to think was meant for Burnell, which properly "should have been *argent* a lion rampant *sable*, crowned *or* within a "bordure *argent*, but the bordure was sometimes omitted. The lion "being crowned is against assigning the coat to Albini. 8 was probably "meant for Lacy, and should have been *gules*, a fess *ermine* between "three boars' heads couped *or*. This is not Lacy, Earl of Lincoln, but "another family. The Earl of Derby claimed the Baronies of Strange, "Mohun, Bassett, Burnell, and Lacy. No. 9 is probably for Warenne, "though it has *argent* for *azure*. 10 is Woodville, accounted for by the "marriage of John, Lord Strange, with Jaquetta, daughter of Sir Richard "Woodville, afterwards Earl Rivers. 11 is Montalt, but the lion should "not have been guardant. [Montalt was borne by the Stanleys *offici-* "*ally*, as seneschals of Chester, in right of Hawarden Castle.—Wm. "Langton, Esq.] 12 is a repetition of 3, viz., Strange. 13 was prob- "ably meant for Blount or Mountjoy. Mountjoy is properly burry "nebuly of six *or* and *sable*, but it is sometimes wavy. 14 may "probably have been for Dymock, which was sometimes *argent* a sword

"in pale *gules*, and sometimes *sable* a sword in pale *argent*. 15 is a "very strange coat, but I conjecture it was meant for paly *vair* and "*gules*, (or *vair* three pallets *gules*,) on a chief *argent* a label *gules*— "which is St. Pal. 16 may have been intended for Lisle, which is "*gules* a lion passant guardant armed *or*. On glass, crowns are often "omitted (but not often added) by mistake. With the exception of "St. Pal, I cannot account for the last four quarterings. The presence "of St. Pal may be accounted for, though not justified. Jaquetta, wife "of John, Lord Strange of Knockin, was an ancestress; one of the "daughters of Sir Richard Woodville, by his wife Jaqueline of Luxem- "bourg, daughter of John, Count of St. Pal; and as nobility in France "was not restricted to the eldest son, or even sons, but extended to "daughters also, the Earl might have supposed he was entitled to the "coat of St. Pal. It was one of the quarterings of Queen Elizabeth "Woodville; but none of her other quarterings appear in this coat. "St. Pal more commonly has the chief *or* and the label *azure*.

"You will see that I cannot reconcile these quarterings with the "Earl's pedigree. According to that, Barneville, Harrington and "Gonshill might have been quartered; but not one appears in this "coat.

"Yours very truly,
"Weston S. Walford."

"Nov. 3rd, 1873."

2. Arms of Henry Stanley, fourth earl of Derby, *ob.* 1593. It contained eight quarterings with an inescutcheon of pretence bearing four more, viz.:—(1) Stanley, (2) Lathom, (3) Man, (4) Warren, (5) Strange, (6) Woodville, (7) Mohun, (8) Montalt. On the inescutcheon—(1) Clifford, (2) Brandon of Suffolk, (3) Burgh of Rockley, (4) Clifford.
3. Arms of Ann, daughter of Edward, Lord Hastings of Hungerford, wife of Thomas, second earl of Derby. *Quarterings*—(1) Hastings, (2) Hungerford, (3) Botreux, (4) Botreux, (5) Moels, (6) Pole, baron Montague, (7) Clarence *i.e.* Plantagenet, countess of Salisbury, (8) Neville of Abergavenny, (9) Montague, (10) Beauchamp, (11) Le Despencer, (12) Clare.
4. An eagle's foot. Badge of Stanley.

[A practical glass painter would understand at once that the *azure* in the Stanley and Warenne coats had flown in the burning, and some other colours also in shield 1.]

The following papers were read:—

I.

Memorial of the late T. T. Wilkinson, F.R.A.S., of Burnley, *by W. A. Abram, Esq.**

II.

Memorials of the late Dr. Robson, of Warrington. His Life and Writings.

By Wm. Robson, Esq., and Dr. Kendrick.

Dr. Robson was the second son and third child of Robert and Margaret Robson, of Warrington. He was born September 23rd, 1802.

* Transactions, p. 77.

Thomas, the artist, was the eldest; and the second, a daughter, who died before she was two years old. Dr. Robson's father was a native of Etterby, near Carlisle, where his ancestors had been copyholders in the Barony of Bourgh for many generations. The name appears in the first Liber Curiarum Baroniæ de Bourgh, dated 33rd and 34th Queen Elizabeth (1591-2); now preserved amongst the archives of the Lowther family. They appear successively in every generation to the year 1788, as copyholders of the same estate, on the banks of the river Eden, to the holders of which also appertained the right of fishery, "*liber pro piscariis*," and throughout this period every holder of the estate, except the last, who died in possession of it, was named John. In this case it was inherited by the second son, Robert; the eldest, John, having died in the life-time of his father.

Dr. Robson's mother's family were descended from Irish Protestants, who fled from Kilkenny to save their lives, from what is now popularly known as the Irish massacre of 1641.

He received the rudiments of his education in Warrington, first under Mr. William Birtch, whose school-room still remains in Academy Court; and then at the Free Grammar School, kept by the Rev. W. Boardman. After this, he received lessons in the classics from the Rev. Joseph Saul, incumbent of Trinity Chapel, Warrington. With the sanction of the Committee of the Warrington Dispensary,—then not long before established, by the zeal and energy of the late Dr. Kendrick,—he was articled to Mr. Heath, who had charge of the Institution. He subsequently studied at Glasgow and London, where he finished his medical education in 1824; when he returned to Warrington, and commenced practice.

In the winter of 1825, he, in connection with his friend Mr. Kean—who was then resident medical officer at the Warrington Dispensary—and a few others, commenced *The Butterfly*, a weekly periodical, printed and published in Warrington till 1827. To this Dr. Robson largely contributed both in poetry and prose.

In the year 1828, Dr. Robson succeeded Mr Kean as resident medical officer of the Dispensary, and retained the office until his resignation in 1842; when he commenced practice on his own account.

In 1847, he was requested by his friends to offer himself for a seat in the Town Council, and was elected by the North-east Ward in November of that year. He served on the Sanitary Committee for three years, doing good service during that time. He was also an active member of the Free Library and Museum Committee till the year 1864.

He was Secretary and one of the chief movers of the Footpath Society, formed for the preservation of the ancient footpaths in and around Warrington in 1854. He took the degree of M.D. at St. Andrews in 1856, and continued practising in his profession until the progress of an attack of "paralysis agitans" or "shaking palsy," compelled him to relinquish both it and all other public business about 1868-9, when he retired into private life, going first to reside at Broom Edge, Lymm, and then to Holly Bank, Heatley. He spent his time here in reading his favourite classics—Homer, Lucretius, the Faust of Goethe, and the Greek New Testament, which he studied critically and devoutly for many years.

In the early part of 1873, his friends in Warrington initiated a public subscription, and, through Dr. Kendrick, requested him to sit for his portrait, which was taken by Mr. Crozier of Manchester, with the view of presenting it to the town, on the completion of the Gallery of Art, then in progress. The life-like picture which the artist has produced will long pleasantly recall the features of one to whose *amor loci* alone we owe so much, which neither money nor favour could elsewhere obtain. He died at his residence, Holly Bank, Heatley, near Lymm, on the 9th of December, 1873, aged 71 years.

His remains were interred in the family grave at Hill Cliff burial ground, near Warrington, on the 13th of the same month.

Dr. Robson's great study and enjoyment through life was scientific archæology. As far as opportunity served, he visited almost every county in England and Wales, and a good part of Scotland, in pursuit of his object; walked on foot over the sites of the old Roman roads of Lancashire and Cheshire, and brought a vigorous mind, fully impregnated with "cold" common sense, into his investigations and researches. Locally, he fixed the Roman *Condate* at Wilderspool. He was the first to point out and expose the forgery of the *Itinera* of Richard of Cirencester, said to have been found in the Royal Library at Copenhagen; and so helped to clear away a mass of rubbish that lay in the road of honest investigation.

But it was not for any dilettante purpose that Dr. Robson carried on investigations. He himself believed, and showed again and again to others, the value of these studies for the purpose of re-writing the ancient history of Great Britain, from the time of Julius Cæsar to that of the Heptarchy. He demonstrated the true character of Cæsar's despatches to the Roman senate, after his unsuccessful invasion of Britain; that, in point of fact, he was beaten by the native tribes, and only too glad to get away from the dangers in which he had involved himself by his rash expedition; that the Welsh people were not the aborigines of England, driven into the mountain fastnesses of that country by the Romans; that the story of Hengist and Horsa, in our older histories, is a fable; and that it is to scientific Archæology alone that we can look for an intelligent and enlightened comprehension of the problem of ancient English history.

Dr. Robson once seriously contemplated writing the history of this country to the 8th and 9th centuries; but was unable to spare the time required for the task from his professional duties; and as he would never do anything by halves, he reluctantly gave up the project. The general results he arrived at in connection with this he gave to the world in three papers, read at meetings of the Historic Society of Lancashire and Cheshire, "On the Materials for the History of the two "Counties, and how to use them," and in an article, printed in the *Gentleman's Magazine* for November, 1866, entitled "Julius Cæsar "in Kent."

Amongst the best known literary men of this country and of the present time, Dr. Robson had acquired a reputation which secured for him their esteem and regard. His naturally clear and strong intellect,

improved by deeply persevering research, and unbiassed by any preformed theories, rendered his opinion valuable, and, therefore, often sought. Amongst his many correspondents at a distance he numbered as friends, Mr. Charles Roach Smith, Mr. Albert Way, Sir Henry Ellis, Sir Frederic Madden, Mr. Rolfe, Mr. Furnivall, all of London; Dr. Hume and Mr. Mayer, of Liverpool; Dr. Holme, Mr. Jordan, Mr. Harland, Mr. Crossley, Mr. Langton, and Mr. Jones, of Manchester, the last-named being his long-tried friend, the librarian of the Chetham Library.

The earliest literary productions of Dr. Robson's own pen appear to be contributions to a witty and amusing periodical called *The Butterfly*, which was printed and published in Warrington in 1825-7. To this we can only say positively that Dr. Robson contributed several sonnets, and a romantic story of a "Prior of Warrington." No doubt other articles flowed from his pen, for he was one of the *trio* who professed to form a single editor.

In the year 1842 he first came prominently before the literary world by editing, for the Camden Society of London, "Three Early English "Metrical Romances," comprising the Anturs (adventures) of King Arthur and his Knights at Tarn Wathelan (near Penrith). The curious manuscript whence these were taken had been discovered by Dr. Robson in an old quarto parchment volume, containing also the records of the Manorial Court of Hale, near Warrington. The learning and research shewn by Dr. Robson in the Introduction and Glossary of this otherwise unintelligible poem, secured for him the notice and regard of some of our most celebrated philologists. Albeit, our deceased friend's hobby did not escape the quizzing of *Punch*, which perhaps led to the "Metrical "Romances" being read and studied more by general readers, and adding to the fun and the fame of our late friend, who could take and enjoy a good joke in his turn.

In 1863 Dr. Robson edited, for the Early English Text Society, the ballad of "Sir John Butler," then for the first time discovered in Bishop Percy's celebrated Folio Manuscript, Whilst fully establishing the general truth of the tradition of the foul murder by knightly hands of this former Lord of Warrington, Dr. Robson's intimate acquaintance with our local history enabled him to clear up some trifling discrepancies, and thus to render the old ballad a very interesting record of a truly historical fact.

He joined the Archæological Association of Great Britain when it was first formed by his friend, Mr. Albert Way, and was for many years its local secretary at Warrington. Though a very regular attendant at its annual congresses, he does not appear to have read any paper before its members until their visit to Chester in July, 1857, when he read an essay on the "Allelujah Victory, and the state of England in the Fifth "Century."

But in the Historic Society of Lancashire and Cheshire he was from the first a most useful and influential member, and for many years no session of the Society passed without some contribution from his pen. These are, indeed, so numerous that a mere list of them must suffice. It will serve to direct our readers to the articles themselves, which were always printed in full in the current volumes of the Society's *Transactions*. Thus, to the second volume he contributed a detailed account of his discovery at Wilderspool, near Warrington, of a distinct Roman station,

which he identified, as is now generally admitted, with the *Condate* of the 2nd and 10th *Itinera* of Antonine. To this spot he led a party of the members at a later period of the session, and the result of the visit has been fully given by the Hon. Secretary, Dr. Hume, in the same volume. In the third volume of the *Transactions* Dr. Robson gives his reasons for doubting the genuineness of the Roman *Itinera*, as said to have been written by the monk, Richard of Cirencester; describes an antiquarian "Visit to Heysham and its Rock Graves;" reads a masterly paper on "The Cheshire Watling Street;" and prints several early documents which he had discovered amongst the muniments in the possession of John Ireland Blackburne, Esq. In the fourth volume we find his paper "On the Ancient Parish Church at Winwick," read at a very pleasant gathering of members of the Historic Society, and others, at Fairfield, Warrington, the residence of his friend, Mr. Marsh. This was on the evening of a day (May 7th, 1852) on which he had acted as chief guide to this antiquarian party northwards and southwards on the line of the Roman roads from Warrington, or rather Wilderspool (*Condate*), near it. In the fifth volume of the Society's *Transactions* we find the first of three most valuable papers, entitled—"The Materials for the History of the two Counties, and the mode of Using them." This was succeeded in subsequent volumes by two other papers in continuation of the subject, and we learn with regret from the biographical notice of our late friend, communicated, as before stated, to one of our contemporaries, that these papers were only an outline sketch for a larger historical work, which he had laid out for himself, but lacked the leisure time to carry out so fully as to satisfy his own idea of its value and importance. Brief as they may therefore be considered, compared with the magnitude of the undertaking, they are yet complete in themselves, and cannot fail to direct the course, and lighten the labours of any future local historian. At the same time they will form a lasting and characteristic memorial of the deep research and unbiassed judgment which our deceased and lamented fellow-member brought to bear upon every subject which he once seriously undertook.

Subsequent to these more important contributions to the *Transactions of the Historic Society*, Dr. Robson read papers, which are also printed, "On the Faussett Collection of Antiquities," purchased by Mr. Mayer for presentation to the town of Liverpool, and later still "On the Exca- "vation of two Tumuli at Winwick, near Warrington."

In the *Journal of the Chester Archæological and Architectural Society* a paper, by Dr. Robson, appeared, read before a meeting of its members a few years ago, entitled "The Roman Occupation of South Lancashire "and North Cheshire;" and within a week of his decease he was occupied in dictating to a friend the commencement of an essay on "The Doomsday Account of South Lancashire." This was intended to be ready for the Historic Society during its present Session.

It will thus be seen that to the last moments of his life his active mind was occupied in pursuits which circled about his native town of Warrington. Though for some years past incapable of taking walking exercise, he had in earlier life made himself personally acquainted, step by step, with our surrounding district, and knew it well. His romantic burial-place at Hill Cliff embraces a prospect of the whole district which was the most prominent subject of his enquiry, and close at its

base lies the *Condate* of his discovery. There is nothing wanting to render his name, and fame, and memory peculiarly dear to Warrington, and they will doubtless be lasting.

November 25th, 1875.

F. J. Bailey, Esq., in the Chair.

The following objects were exhibited :—

By Mr. C. T. Gatty, of the Mayer Museum.

A selection of Peruvian antiquities from the cemetery of an ancient fishing village on the coast, about three and a half miles south of Pisagua, obtained by Mr. Edward Bald, of Wells, near Jedburgh, in Scotland. Among these is a remarkable bunch of fishing-tackle, composed of bones, thorns, and string; also a harpoon with quartz head and bone barb, both bound with string to a wooden stem. No trace of any metals was found in the cemetery.

The Rev. Canon Hume sent—

1. A drinking-cup made from an ox horn; carved by a convict in Australia, by the fire-light in his log-hut.

2. A sword-like apparatus, formed apparently of the tooth of a young elephant. The handle is carefully carved; but the remainder is in a rough state, merely blocked out. It has an orifice on the convex curve at the middle; and is said to be used as a horn for sounding, on the banks of the Niger.

By Mr. Dixon.

A model of the restored font in Ormskirk Church, in illustration of his paper.

The following paper was read :—

On the Restoration of Ormskirk Church, *by James Dixon, Esq., F.R.H.S.*

December 9th, 1875.

Rev. Canon Hume, D.C.L., Vice-President, in the Chair.

C. T. Gatty, Esq., was duly elected a Member of the Society.

The following objects were exhibited :—

By the Rev. Canon Hume.

1. An ancient spear-head, found in the churchyard of Kirkby, part of the ancient civil parish of Walton. His attention had been drawn to it by the Rev. Canon Gray, the Vicar, who had lent it for exhibition. Since the erection of the new church, the churchyard had been re-arranged, and one of the ancient pathways had been broken up. It was here that this object was found. The length of the whole is sixteen inches, and about half an inch appears to have been broken from the

point. The portion of the blade still remaining is 9½ inches to the shoulder; and the socket is about two inches in length. It was at first supposed to be a dagger, but it is clear that it is a spear-head.

2. A stone battle-axe, mounted; and the casting of another unmounted.

3. Some greenstone axes from New Zealand. He made some remarks on a newspaper paragraph of the present week, in reference to a stone axe-head, recently found at Cannobie, in Dumfriesshire.

By Mr. Potter, in illustration of his Paper. Several objects recently found on the Cheshire shore, during the year 1875. These comprised the following :—

1. Bronze, probably of the Roman or Saxon Period.
A swivel, length 1½ inches, width 1 inch.—A cross-headed ornament, height 1½ inches, with a spaniel crouching, suspended from one arm of the cross. The rivet-hole in the opposite arm indicates that a similar dog had been attached. Length of spaniel ¾ inch.—One solid-headed pin, length 2⅝ inches.—Head and portion of another pin.

2. Mediæval Period.
(*a*) *Brass or Bronze* :—Three small pins with heads; one head gone.—A needle made from sheet metal.—One buckle brooch, the acus gone; has been ornamented with enamel.—Buckle brooch, lozenge-shaped, ornamented at the angles; acus attached.—Finger ring.—Shoe buckle, from Hilbre, 17th to 18th century. (*b*) *Articles of Iron* :—Six knife blades.—Spike, similar to what is used for butt-end of fishing-rod.—Spur-rowel. (*c*) *Articles of Pewter or Lead* :—Buckle-brooch, the acus gone.—Curious ornament probably designed from a fossil nautilus.

3. Coins.
Roman (3rd brass) : Constantine II. Rev., *Gloria exercitus.*—English : Edward II penny; *Edward R., &c.*, (Canterbury Mint,) CIVITAS CANTOR; Edward penny, CIVIT for *civitas.* Charles II shilling.

The following paper was read :—

OBSERVATIONS ON THE GEOLOGY AND ARCHÆOLOGY OF THE CHESHIRE SHORE, *by Charles Potter, Esq.**

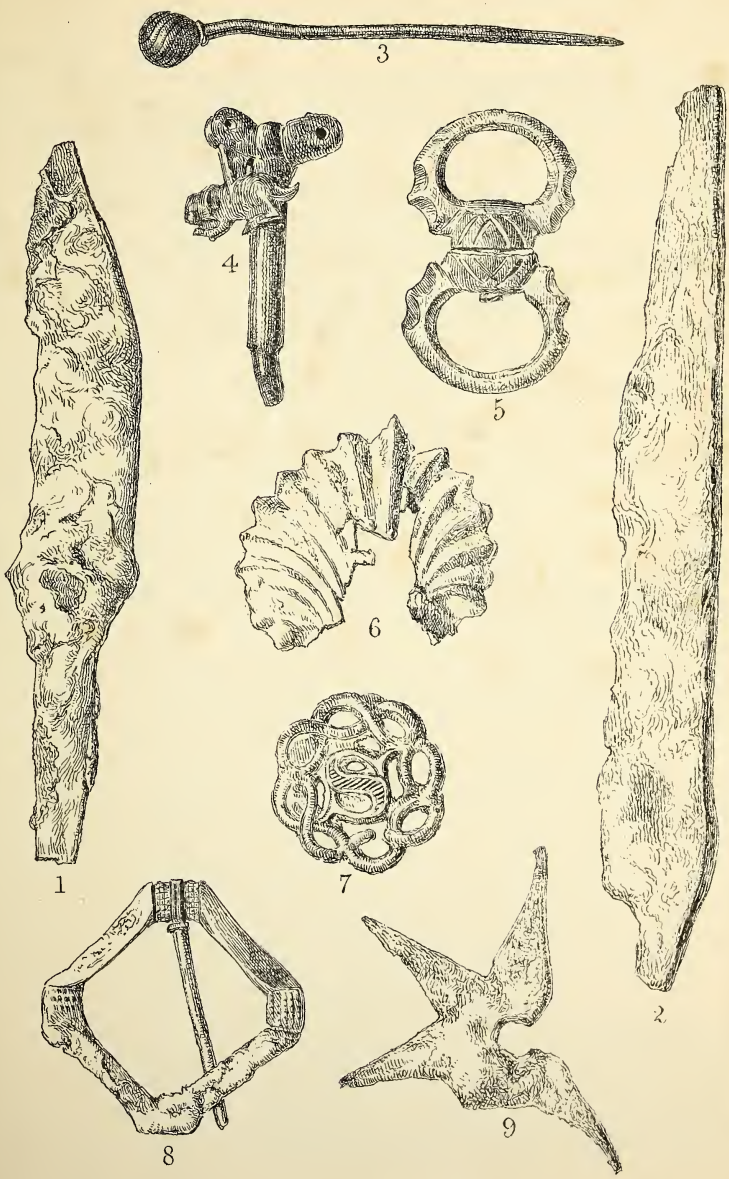
January 13th, 1876.

THOMAS GIBSON, Sen., Esq., in the Chair.

The following objects were exhibited :—

1. A horn book from the Warrington Museum, kindly forwarded by Dr. Kendrick, with woodcuts of two others; and a battledore, or envelope containing the alphabet, &c., on cloth paper.

* Transactions, p. 121.



1, & 2, Knives.—3, Pin.—4, Ornament.—5, Swivel.—6, Nautilus Ornament.
7, Ornament.—8, Buckle Brooch.—9, Spur-rowel.

J. E. WORRALL, LITH.

OBJECTS FROM THE CHESHIRE SHORE.

2. A photograph of the title-page of a book printed at Liverpool, 1712, entitled—"Hymns sacred to the Lord's Table, collected and methodized by Charles Owen." It was printed for S. Terry by Daniel Birchall.

By Mr. Richards.

A large number of coins of various sizes, evidently Roman. They were said to have been found in Egypt.

By Mr. Watkin.

A drawing of a Roman altar found at Halton, near Lancaster.

The following paper was then read by Canon Hume:—

ROMAN LANCASTER,* *by W. T. Watkin, Esq.*

January 27th, 1876.

REV. CANON HUME, D.C.L., Vice-President, in the Chair.

The following objects were exhibited:—

By Mr. Gatty.

1. Papal bull, with leaden seal attached, bearing the heads of SS. Peter and Paul, and the name of Pope Clement XI.
2. Two Oriental tiles; one from Damascus and the other from Cairo.
3. A bottle of old Bristol glass, given to the exhibitor by Mr. Wm. Edkin, of Bristol, grandson of the decorator. The best specimens are enamelled: this is only surface-painted.

By Mr. W. T. Watkin.

1. A caricature, coloured print, of 1774, shewing the extravagant modes of dressing the hair. It appeared to stand about $2\frac{1}{2}$ feet above the head, and to be surmounted by a small bonnet like those of modern times.

   The Rev. Canon Hume, in connexion with the above print, exhibited the actual pins which had been used in fastening the hair, and which had belonged to Mrs. Molyneux (formerly Hardinge), at the date referred to. He also read from the columns of Notes and Queries in the Belfast *Northern Whig*, a description of the fashion, taken from an old magazine of the beginning of the present century.

2. A photograph of a Roman lady's back hair, taken recently in a mass from a sarcophagus found at York. It shews two hair pins, one at the top and the other near the crown, which had been used in fastening it. At various parts, the lime with which the corpse had been surrounded adheres to the hair. The photograph, which is a very excellent one, is by Moorhouse and Co., and was lent by the Rev. Prebendary Raine of York.

* Transactions, p. 95.

By Mr. Bailey.

A bronze casting of the Virgin and Child, in alto-relief, and enclosed in an arch, from an old cross at the head of the grave of Lady Stourton, in the old parish churchyard, Blackburn.

2. A lithographic print of the old parish church of Blackburn before it was pulled down in 1819, to make room for the present structure.

By Mr. C. Watters.

A god or huacca, found near Cochibamba, in Bolivia.

By Mr. J. H. Gibson.

An ancient cattle bell, inscribed—C. T. Wigan; and an embossed bag of silk and bullion made during the first French Revolution, 1793.

The following paper was read by the Hon. Secretary, in the absence of the Author.

The Ormskirk Market Cross, *by James Dixon, Esq., F.R.H.S.*

February 10th, 1876.

Rev. Canon Hume, D.C.L., Vice-President, in the Chair.

The following objects were exhibited:—

By Mr. Gatty.

A portion of a large bone, said to be part of the leg of a camel, from the Mayer Collection. It had, engraved on its convex surface, five arcades. Under the central one was seated the Virgin and Child, with two small figures, one on each side. Under the two arcades to the right of the observer were Matthew and Mark; and under those to the left were Luke and John, with their respective emblems. Each of the evangelists was engaged in writing, and the book on the desk before him showed several letters which could perhaps be identified with a portion of his gospel, on a more minute examination.

By Mr. Benas.

The book from which the hint was taken that formed the text for his paper. It had been written by one of his ancestors, as a common-place book, soon after the invention of the Art of Printing, and was in Hebrew, and Latin, and German. It was a small quarto, and had paper leaves.

By Mr. Richards.

1. A gold ring found in an excavation near Alexandria (Ramleh), in Egypt. The stone which it contained had engraved on it a standing female figure, which was identified by Mr. Gibson as a priestess of On.

2. A number of coins, chiefly Roman, found at the same place. There were some also from Asia Minor, and one or more of the Greek Colonies. The whole were of very different dates and values.

By Mr. C. Watters.

1. A spindle with cotton thread on it and nine other beautifully formed spindles, apparently used in the manufacture of the woollen fabrics of the country, from the llama, alpaca, vicuna, &c.
2. A staff or short sceptre, apparently of ebony, originally covered with bands of wool. From the ancient graves of Supe, in Peru.
3. A small earthenware vessel, shaped like a duck, but with the head of a deity; the orifice being in top of the animal's head.
4. A deity with revolting features, in base silver, from Pachacamac, in Peru.

By Mr. J. H. Gibson, in illustration of Mr. Benas's paper.

A large silver coin of Edward VI. in which the two central figures, of the date 1551, were each like the figure 2 inverted.

The following papers were read:—

Theory as to the Origin of Arabic Numerals, *by B. L. Benas, Esq.**

Origin of the Territorial designation of Bispham, in Lancashire, *by William Bispham, Esq., of New York.*

The Chairman then exhibited and explained a collection of a dozen huaccas from the graves of the Peruvian dead. Most of them were from Truxillo, but a few had been found near Lima.

February 24th, 1876.

William Beamont, Esq., Vice-President, in the Chair.

The following objects of interest were exhibited:—

By the Rev. Canon Hume.

1. A farmer's account book, kept near Upton, in Cheshire, from 1761 to 1766. Both the work and a transcript of it had been lost on the 12th November, 1874, when he read a paper on the subject.
2. Part I, A to E (inclusive), of the new *Glossary* of Lancashire Words, edited by Messrs. J. H. Nodal and George Milner; and published by the English Dialect Society.

By Mr. Gatty, of the Mayer Museum.

1. A curious brown flint knife, from Egypt.
2. A pre-historic bronze spoon of late Celtic period. It has been published in the *Archæological Journal*, vol. xxvi (1869), p. 65.

The following paper was read:—

A Reeve's Account of a Cheshire Manor, from Michaelmas of 46 Edward III (1372), to Michaelmas in the following year, *by William Beamont, Esq., V.P.*†

* Transactions, p. 143. † Transactions, p. 1.

March 9th, 1876.

W. H. Richards, Esq., in the Chair.

The following Ordinary Member was duly elected :—

The Rev. Engelbert Horley, M.A., the Rectory, Sefton.

The following objects of interest were exhibited :—

By Mr. Gatty.

A MS. volume illuminated, a Primer or Book of Hours, from the Mayer Collection, 12,003 ; French work of the 15th century. It formerly belonged to Mr. Henry Francis Lyte, author of the hymn, " Abide with me."

By Canon Hume.

Four curious photographs on glass ; three for insertion in rings, and the fourth forming the stone of a ring. It has an entire page of a newspaper upon it.

The following paper was read :—

On the Inaccuracies which probably exist in the Census Return of Ages, *by Thomas A. Welton, Esq., F.S.S.**

March 23rd, 1876.

Rev. Canon Hume, Vice-President, in the Chair.

The following Ordinary Member was duly elected :—

Thomas W. Mercer, Esq., 16, Kensington.

Mr. Potter exhibited a variety of interesting objects recently found on the Cheshire shore. These included an antique shoe-buckle.—A black buckle, not very ancient, with the word alman impressed.—An embossed bead, Roman ; supposed to be that of Ceres.—Two hair pins or portions of needles.—Two fish-hooks.—Two portions of buckles, lead.—Two similar fragments of brass or bronze.—Three loops of the size of small buckles, with lids, for fastening with knotted strings.—Two stone implements, like spindle whorls.—One curious bronze ornament.

Mr. Watkin exhibited a photograph of a mutilated figure found at York, supposed to be a Roman deity.

Mr. Richards exhibited two pair of buckles of the last century, and compared them with those shown from the Cheshire shore.

Mr. Gatty exhibited an exact fac-simile of an ancient Irish silver chalice, of the 6th century ; found at Ardagh, Ireland. This was manufactured by a Dublin artist ; and presented to the Museum by Mr. Yates Thompson. Inside of the original was found a vessel of dark copper or bronze, of which also a fac-simile was shown.

* Transactions, p. 149.

Mr. J. H. Gibson exhibited a groat of Henry VII.

Canon Hume exhibited a dish, like an alms dish, made of the wood of York Minster; the metallic portions being stated to be portions of the melted bells. It was a relic of the fire caused by Martin, in May, 1840.

He also drew attention to the original Edinburgh edition of Burns's *Poems*, published in 1787, when the author entertained the idea of going abroad. From the printed list of subscribers, it appears that there were 2,879 copies subscribed for; and many more names came in afterwards. From one of the poems, "Tam Samson's Dead," he showed that the modern term "Rink," is Scotch, and is a term used in the game of curling. It is a dialectal form of the word *ring*.

Mr. Potter explained by means of a diagram, the way in which he had discovered the remains of a house on the shore of Meols, and the mode of its construction. It was on the upper surface; and the wooden posts which supported the roof had each been set on a round flat stone. There was a hole in the centre of each stone, and a projection in the centre of the base of the post which fitted into it.

Mr. Watkin read some remarks earnestly recommending the Society to undertake excavations at Lancaster and Ribchester; from both of which valuable treasures of antiquity might be obtained. The following was the purport:—

"It will no doubt be remembered by some of the members present, that a few weeks ago the Rev. Canon Hume read before this Society a paper which I had written, upon the Roman remains existing in the town and neighbourhood of Lancaster. Since that time I have been requested by several well-known antiquaries to endeavour, not only to attempt an excavation of the site of Roman Lancaster, but also of the Roman station at Ribchester, near Preston. At both of these sites the interesting inscriptions which have been found, and the immense foundations still existing, and in some cases appearing above the surface, fully justify the opinion that most interesting discoveries would be the result of excavations. But how is this result to be obtained? It is by combined effort and developed organisation, by systematic research and scientific exploration, by popular interest and awakened zeal. Now, gentlemen, your Society is devoted to archæology, more especially that of this county. Allow me to bring before you the propriety of making an appeal to the county generally, under your auspices, for the carrying out of these views. Of course, some may raise the old question, *Cui bono;* but that is, I think, easily answered. What is the object of such excavations? It is, as I have said elsewhere, to lift the veil from the footprints of the Cæsars; to bring the first century face to face with the nineteenth, the age of the Apostles into the light of our own. Temples and altars, streets and villas, valuable inscriptions and interesting works of art, are amongst the spoils that lie buried there. Are these to be left to be destroyed by the ignorant, or for ever hidden beneath the soil? In an age when Babylon and Nineveh are giving up their inscriptions relating to the infancy of man's history—when Rome is allowing the very foundations of her Coliseum and of her palaces to be explored—when the great temple of 'Diana of the Ephesians' is being brought piecemeal to England—when the land of Moab is even yielding its

history, and the temple of Olympian Jove is being dragged from its hiding-place, shall it be said that Englishmen are apathetic concerning their own most interesting antiquities? What those Assyrian tablets (which I never gaze upon without a feeling of awe) are to the world's history—it's A B C in fact—our Roman antiquities are to England. And in this county palatine, the most opulent, the most populous, the most energetic in the kingdom, may we not set the rest of Great Britain an example? Be not archæologists, gentlemen, in name only, but in deed, in truth, and in practice. The vicarage fields of Lancaster especially would be rich in remains. The tracks of the streets are still visible; and both there and at Ribchester I have obtained permission for excavations to be made. After consultation with your chairman, therefore, I bring before you the proposition that circulars be issued to every one of wealth, position, or influence in the county, with the view of obtaining a fund for excavations to be made by the Society. Other means may also be devised. Many antiquaries, I feel sure, would be only too glad to subscribe to it. Personally, I shall leave untried no effort to bring about this result, and will give the Society every assistance in my power. It rests with you to decide upon the point, and in your hands I leave it. Gentlemen of the county palatine, will you still be apathetic?"

It was resolved unanimously, that the subject be referred to the Council.*

The following paper was read:—

On some Inedited Discoveries of Roman Remains in Lancashire and Cheshire, *by W. T. Watkin, Esq.*†

April 6th, 1876.

F. J. Bailey, Esq., in the Chair.

The following gentleman was duly elected a Member of the Society:—

Rev. Alex. Stewart, M.A., Rector of Liverpool, 9, Sandon street.

Mr. Richards exhibited five medals commemorative of historical events within the last ninety years, viz.:—Dr. Priestley, 1783; Coronation of George IV, July 19th, 1821; Opening of the Liverpool and Manchester Railway, Sept. 15th, 1830; Opening of the Grand Junction Railway, July 14th, 1837; Marriage of Queen Victoria, Feb. 10th, 1840.

Mr. Potter exhibited a copy of the *Liverpool General Advertiser*, or *The Commercial Register*, Dec. 12th, 1766.

* Resolution adopted by the Council, 28th April, 1876—

That this Council approves of the suggestion which has been made by W. T. Watkin, Esq., that excavations be undertaken at Ribchester or Lancaster or both; and suggests the formation of a special Committee, to raise funds and superintend the work.

† Transactions, p. 69.

Mr. James Bromley brought for exhibition an ancient oak chair curiously carved on the arms and back.

Dr. Bailey showed a copy in miniature of the *New York Tribune*, lithographed from a photo. Size of page 6 inches by $4\frac{3}{4}$ inches.

The following paper was read :—

Etymology of Plant Names. I. Fruit and the Edible Berries, *by Thomas Comber, Esq.**

April 20th, 1876.

The Very Rev. the Dean of Chester, President, in the Chair.

The following gentlemen were duly elected Ordinary Members :—

James Bromley, Esq., 11, Hope place.
Rev. Dr. Bartle, Freshfield College.
William Roper, Esq., Lancaster.

The Rev. Canon Hume laid on the table twelve copies of the Catalogue of the Library and Museum of the Society ; and announced that an edition of 800 copies had been presented to the Society by Joseph Mayer, Esq., V.P.

It was moved by J. A. Picton, F.S.A., seconded by the Rev. Robert Salthouse, F.R.G.S., and resolved unanimously—That the best thanks of the Society be given to Joseph Mayer, Esq., for his generosity and kindness in making this presentation.

Mr. Comber exhibited a manuscript book, entitled—"A Booke of Remembrances, of all the Remarkable Deliverances of my Selfe Husband and Children, with theire Births ; and other Remarks as concerning my Selfe and Family, beginning from the year 1625." It was written by Alice Wandesforde (afterwards Mrs. Thornton), whose father, Sir Christopher Wandesforde, was Lord-Deputy of Ireland in 1640, succeeding Strafford in that office. Many of the entries have a local interest, and refer specially to the city of Chester. Mr. Comber read some passages from a printed book, which comprises this and two similar manuscripts.

Canon Hume exhibited an ivory carving, which was one of four that had lately come into his possession. It represented the "Scourging of Christ;" and the other three represent respectively, "St. Dominic," "St. Sebastian," and "Hercules and Omphale."

Mr. Bromley exhibited a quaint little volume, entitled a "Key to the Bible," supposed to have been written by the Rev. Francis Roberts, in 1649.

Mr. Watkin mentioned the finding of a large sculptured Roman slab, near Ribchester : and that the proposal to make investigations at this site, and at Lancaster, had been favourably received throughout the country.

* Transactions, p. 15.

The following account of the slab has been forwarded to the Society :

Account of a Roman Sculptured Slab,* found at Ribchester.

By W. A. Abram, Esq.

The discovery of a monumental stone, displaying on its front emblematic sculpture of Romano-British workmanship, at Ribchester, adds a noteworthy item to the record of remains of the Roman occupation in this part of Lancashire. The following is a more detailed description than has yet been given.

The slab was taken out of the bed of the Ribble, by Mr. P. Wearden, of Blackburn, on Saturday afternoon, April 8th, 1876. He had previously observed the tapered end of the stone beneath the water lying imbedded in earth some ten or twelve feet from the river's edge. The exact spot at which the relic was recovered is on the Clayton-le-Dale side of the Ribble, nearly opposite Ribchester village, but a few hundred yards higher up the stream. At Ribchester, the bend of the Ribble is on that side, and the force of the current in times of flood has encroached largely upon the bank that was in ancient times part of the area of the Roman fortification. The next reach of the river above curves sharply against a steep clay bank on the south or Blackburn side of the valley; and here, too, so much land has in the lapse of time been carried down by the rushing floods, that, within human memory, the river has shifted its bed in that direction to the extent of more than its own width.

The last considerable fall of the bank on Mr. Wearden's farm happened this Spring, and about four yards of the land then disappeared, owing to the sapping waters. It is very likely that this sculptured stone fell into the river recently, along with the portion of the bank in which it was buried several feet below the surface.

Having secured the assistance of several men, Mr. Wearden succeeded, with difficulty, in lifting the slab out of the river and landing it upon the bank. It was then seen to be a complete example of antique stone-carving. It remained at the place where it was found two or three days, and was then removed to Blackburn. The writer of this note proceeded to the river's side at Clayton-le-Dale, on Monday, April 10th, accompanied by two friends, and saw the slab previous to its removal.

A careful inspection of it, aided by photographs which I have since secured, enables me to offer the following remarks upon the appearance and character of the sculpture.

The subject of it is a Roman horseman, driving his spear into the body of an enemy, recumbent in the lower right-hand corner of the sculpture. Its purpose was, doubtless, that of a sepulchral monument to some commander or officer of the Roman garrison at Ribchester. The dimensions of the slab are 5 feet in height, and 2 feet 6 inches in width. The stone is fine sandstone, similar to that which is quarried

* This was engraved from a photograph for Mr. Abram's forthcoming *History of Blackburn Parish*. He kindly permitted the Society to take an electrotype. See *Frontispiece*.

now so extensively for architectural purposes at Longridge. The upper end is gable-shaped, with a finial ornament, much battered, at the apex. The sculpture is enclosed within a panel, pointed at the head, hollowed out of the front of the slab, the projected border of the panel being about three inches in width on the surface, excepting the bottom rim, which is double the breadth of the sides. The external edges of the stone are not strict in their lines; and both of the bottom corners are broken away. The ground of the sculpture is pitted all over with marks of the sculptor's chisel, which has been much like an ordinary modern punch.

In describing the figures, it may be observed that the design exhibits a degree of rudeness and rigidity—an absence of the freedom and grace of outline seen in the purest examples of antique sculpture. Neither horse nor rider is carved in right proportion; the animal is too short, and the head of the horseman is too large for his body. Still, there is a certain vigour in the attitude of both figures. The hind feet of the horse are both together, resting upon the floor of the panel; the left fore-leg is straight, supporting the body; and the right well lifted, the hoof almost touching the head of the prostrate foeman. The horse's head is erect, held in by a thick bridle; the mouth is partly open, teeth set; nostril, eye, and ear, well defined. The mane is ridged and flowing backward; the head-gear of the horse, ornamental trappings crossing the lower part of the neck and hind quarters, and large square saddle-cloth covering the flank, are each distinct in their presentation. The "hip strap" of the saddle-cloth, seems to have had ornaments pendant from it; and there is evidence of ornament on the bridle-rein. The tail of the horse projects its stump against the left wall of the panel, and a portion of its prolongation is revealed descending vertically in the confined space between the quarter and the enclosing rim of the stone. The rider is seated erectly upon his steed; the backward bend of the leg and downward point of the unstirruped foot are what is commonly shown in Roman equestrian statuary. The warrior's head is bold and massive; the eye full; nose prominent, but battered partly away; chin square; ear large and very clearly cut; hair thick and massed about the head in ridgy curls. He is bareheaded. His attire is a point of interest; the short, close-fitting tunic descends to the middle of the thigh; and the outer garment is a species of mantle, fastened over the breast with a large circular brooch or fibula, having a boss on the centre, and pushed backwards in thick folds to leave free the extended arms. The left arm bears an oval shield, the fingers grasping which are visible; the right hand is lifted upwards and grasping a spear (thumb upwards), which descends diagonally and buries its head in the breast of the vanquished adversary. The whole will remind the observer of the conventional representations of St. George and the Dragon.

The soldier's cloak is, I conclude, meant to represent the Roman vestment of military distinction, the *paludamentum*, worn in place of the *toga* of the civilian class. The *paludamentum* was a mantle open in the front, that reached down to the knees in graceful folds when the wearer was standing, and hung loosely over the shoulders; it was fastened across the breast by a clasp—the Roman *fibula*. The position of the brooch shifted according to the movements of the wearer. When the arms were not in exercise, it generally lay upon the right shoulder, like the buckle of a Highlander's plaid; but when a soldier was engaged

in the attack or defence in warfare, the *fibula* was brought to the front, and the mantle which it held was pushed back over the shoulders and hung away behind in the centre of the warrior's back. It is thus that the garment appears in this sculpture; but the hinder parts of it are not revealed. Besides the spear, the horseman is armed with a long dagger, fixed in its sheath on his right side, supported by his girdle. Dagger and sheath together measure 14 inches; the blade would be about 9 inches; and supposing the figure to be about half life-size, and his weapon in proportion, the dagger must have been a formidable weapon, with a blade about 18 inches in length. Its hilt seems to have a flat semi-circular knob. This very much resembles the *misericorde*, or "dagger of mercy," shown on the right of figures on our monumental brasses, the sword hanging across the front of the body, from right to left.

The remaining figure in the group is that of the impaled enemy, recumbent upon his left arm, with his head beneath the horse's hoof, and his legs doubled, in the lower part on the panel. This figure is armed only with a shield, in shape an irregular oval, which covers the side of his body presented to the observer, but does not shield his breast from the lance of his victorious antagonist. If the proportions of the vanquished in this group fairly represent the size and stature of the foes of the Roman conquerors of Lancashire, they must have been a puny race, as well as naked, ill-armed, and strangers to the military science of which Rome was then acknowledged master. The nose is large, the neck thick and sensual like; while the lower limbs and the phrenological development seem small. But I imagine the prostrate "native Briton" in this composition may have been made smaller than his proper bulk, so as to accommodate himself to the convenience of an artist who had not allowed room in his design for a full-sized aboriginal warrior.

Such are the details of this piece of Roman statuary, which, after having lain hidden in the ground for perhaps fourteen centuries, at last accidentally returns to the daylight. It informs this generation of English people concerning the art and military habits of a race that came hither from the Appenine and Alpine slopes to conquer and settle, in the age when St. Paul was a prisoner at Rome, and that, after three hundred years of domination, took their last departure from Ribchester and other Romano-British cities nearly seven hundred years before the Norman Conquest.

In connexion with this discovery I may mention that several somewhat similar pieces of sculpture of the Roman period have been found in this country, on the sites of Roman stations, and have been noted by antiquaries. Here at Ribchester, in fact, a slab of the same character was dug up, probably three hundred years ago. Camden, writing in 1607, mentions this relic, which was discovered not very long before his visit to Ribchester. He says:—"Here was also lately dug up a stone, "on which was carved a naked figure on horseback, without saddle or "bridle, brandishing a spear in both hands, and insulting over a naked "man on the ground holding in his hand something square. Between "the horse and the prostrate figure are D. M.; under the figure GAL "SARMATA. The rest of the many letters are so decayed as not to be "read, nor can I form any conjecture about them."

What became of this stone is nowhere recorded. It differed in several respects from the one now recovered, as the reader will observe. The absence of any inscription upon the slab which I have described reduces very materially its historical value and its interest for archæologists. An inscription that told the story of the officer to whose memory it was erected as a monument would have been most acceptable; would have substituted fact for conjecture, probably indicating the date of the work. In Ackerman's *Archæological Index*, pp. 66, 67, are printed inscriptions upon two sepulchral stones of generally similar character with the present, discovered near Cirencester in 1835 and 1836, and an engraving of one of them is presented (plate VIII, fig. 3). A more nearly identical group of Roman monumental sculpture appears on a slab found near Cheltenham in 1845, which is figured and described in the *Journal of the Archæological Association*, vol. I, pp. 237, 238. This monument bears a Latin inscription to Rufus Sita, a horseman of the sixth Thracian cohort, who died aged forty, and to whom the monument was reared by his heirs.

Postscript.—December, 1876.—I may add a word about the disposition of this Roman relic. It is yet, I hear, in the custody of the person who took it out of the Ribble. Thinking such an object should, if possible, be secured for some public local museum, and thereby made always accessible to students of Lancashire antiquities, I lost no time in negociating with the parties who claim to own the relic, and having at length obtained from them a written statement of the sum that would purchase the sculpture, I brought the matter before the Committee of the Blackburn Free Museum and Library. The Committee, on my representations, at once offered a very liberal price for the slab; but, to our annoyance, we found that the owners of it, bent upon extorting the uttermost amount of money, held back from the terms, and prepared to use our bid to get a still higher price elsewhere. The Blackburn Museum Committee, indignant at such conduct, immediately rescinded the offer, and thus my effort to obtain the relic for the benefit of our local Museum has been abortive. It is not unlikely the parties who have to sell the slab may discover in the end that their inordinate greediness has overreached itself.

Canon Hume drew attention to the fact that the English Dialect Society, which had been formed in 1874, and which had its first home at Cambridge, instead of at London, had lately been transferred to Manchester; where Mr. J. H. Nodal will be its Hon. Secretary, and Mr. George Milner its Treasurer. A Committee has been constituted at Manchester, and a new Prospectus has been issued.

The following paper was read :—

CHESTER CATHEDRAL; ITS HISTORY, ARCHITECTURE, AND RESTORATION, *by the Very Rev. The Dean of Chester,* President.*

SESSION XXVII, 1874-75.

THE HISTORIC SOCIETY OF LANCASHIRE AND CHESHIRE, *in Account with* J. G. JACOB, *Treasurer.*

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„ Sessional 85 0 6			
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Balance in hand	37	14	11
	£148	4	2

Audited, October 20th, 1876,
FRANCIS J. BAILEY.

E. & O. E.

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* In seconding a vote of thanks to the author of the paper, Mr. Picton suggested that the Members of the Society should subscribe towards the fitting up of one of the fifty new stalls in the Cathedral, in honour of one to whom they were much indebted, the Rev. Canon Hume. The proposal was favourably received by the Chairman and others; and Dr. Buxton was requested to act as Secretary and Treasurer for the purpose.

[This arrangement was duly carried out; and the stall was occupied by Canon Hume at the re-opening of the Cathedral, on the 8th of August.]

DONATIONS TO THE LIBRARY.

1.—England.

Birkenhead Literary and Scientific Society, Report of, Session xviii, 1874-75.

Buckinghamshire, Records of, 1874.

Cambridge Antiquarian Society;—Remarks upon the Cover of the Granite Sarcophagus of Rameses III, in the Fitzwilliam Museum, by S. Birch, LL.D., Keeper of Oriental Antiquities.

Cornwall. Royal Institute of;—Fifty-eighth Annual Report, 1876.

Essex. Archæological Society of;—Transactions, vol. i; N. S., part 2.

Leeds Philosophical and Literary Society;—Fifty-fifth Report, Session 1874-75.

Leicestershire. Architectural and Archæological Society of;—Transactions, vol. iv, part 1, 1875.

Lincoln. Reports and Papers read at the Meetings of the Architectural Societies of the Diocese of Lincoln, County of York, Archdeaconry of Northampton, County of Bedford, Diocese of Worcester, County of Leicester, and Town of Sheffield. 1874.

Liverpool Architectural and Archæological Society;—Proceedings of, Twenty-eighth Session, Second and Third Meetings (3rd Nov. and 1st Dec., 1875).

Free Public Library and Museum and Gallery of Art;—Twenty-third Report of the Committee, 1875.

Literary and Philosophical Society;—Proceedings of, Sixty-fourth Session, vol. xix, 1874-75.

Naturalists' Field Club;—Proceedings for Session 1874-75.

Philomathic Society;—Proceedings, vol. xx, for Session 50.

London. Archæological Society for London and Middlesex;—Transactions, vol. iv, part 3, 1874. Temple Bar, or Some Account of y^e^ Marigold, by F. G. Hilton Price, Esq., F.C.S., &c.

Geological Society;—Quarterly Journal, Dec., 1874, vol. xxx, part 5; May and Nov., 1875, vol. xxxi, parts 2 and 4; List of Members, Nov., 1875.

Royal Archæological Institute;—Nos. 123, 124, 125, 126, 127, 128.

Royal Asiatic Society;—Journal of, vol. vii, part 2, 1875. New Series, vol. iii, part 1 (Oct., 1875). The Fifty-second Annual Report of, 1875.

Royal Astronomical Society;—Memoirs of, vol. xlii, 1873-75.

Royal Society;—Proceedings of, Nos. 165, 166, 167.

Royal Society of Literature;—Transactions, Second Series, vol. xi, part 1.

Royal Geographical Society;—Proceedings, vol. xviii, Nos. 4 and 5; vol. xix, No. 5; vol. xx, Nos. 1 and 2.

Society of Arts;—Journal of, Nos. 1170 ..... 1221. (Wanting—Nos. 1193, 1197, 1198, 1202, 1203, 1207.)

Society of Antiquaries;—Proceedings, vol. vi, Second Series, No. 2, 3, 4, 1873-74-75.

Statistical Society;—Journal of, June, 1874; Sept. 1874; ..... Dec., 1875.

Manchester. Literary and Philosophical Society of;—Proceedings and Index; part of vol. xiv.

Literary Club;—Transactions, vol. i, 1874-75.

Montgomeryshire. Collections, Historical and Archæological, relating to;—viii, parts 1 and 2; ix, part 1.

2.—Scotland.

Royal Society of Edinburgh; Transactions, vol. xxvii, part 3, Session 1874-75. Proceedings, Session 1874-75.

3.—Ireland.

Royal Dublin Society, Journal of. No. 44, vol. vii.

Royal Geological Society of Ireland, Journal of. Vol. xiv, Part 2, 1874-75.

Royal Historical and Archæological Society of Ireland, Journal of. Fourth Series, Nos. 12, 13, 14, 15, ..., 17, 18, ..., 20, ..., 22, 23.

4.—France.

Société d'Emulation d'Allier, (Moulins); Guerres de Francais et des Anglais, du xi^{e} au xv^{e} Siecle, par M. J. Lachauvelaye; 2 vols., 1875.

5.—Switzerland.

Historical and Archæological Society of Geneva; Memoires et Documens, Publies par la Société, 1875; tome xix, livraison 1.

6.—Italy.

Societa Toscana (Pisa) Atti, vol i, fasc 1 and 2.

7.—Denmark.

Royal Society of Northern Antiquaries, Copenhagen.

Clavis Poetica Antiquæ Linguæ Septentrionalis, 1864.

Antiquarisk Tiddskrift, 1861-63.

Memoires, Nouvelle Serie, 1863.

Memoires, Nouvelle Serie, 1873-74.

Tillaeg, &c., 1866; ditto, 1873.

Aarboger, 1866, 1, 2, 3, 4; 1867, 1, 2 and 3; 1874, 1, 2, 3, 4.

8.—America.

Smithsonian Institution at Washington, Reports; 1873-74, 2 vols.

9.—Miscellaneous.

From the Author. Lecture on the Scientific Results of the Brighton Aquarium. By T. W. Wonfor.

Education in Liverpool. By the Rev. Canon Hume.

On Roman Leaden Seals. By C. Roach Smith, F.S.A.

Some Gleanings relating to Lancashire and Cheshire, Part 3 (only 250 copies separately printed). By J. P. Earwaker, M.A., F.S.A.

On certain Swords, inscribed Edwardus, Prinz Angliae (bl. let.) By J. P. Earwaker, M.A., F.S.A.

The Abbé Cochét: a Biographical Sketch. By C. Roach Smith, F.S.A.

From the Editor. List of Books, Memoirs and Papers, by Dr. John Edward Gray, F.R.S., edited by J. Saunders, Esq., 1875.

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